

for further reclamation. Their instructions seem to have led to the enactment of Regulation IX of 1816, which provided for the appointment of a Commissioner in the Sundarbans, and vested him with all the duties, powers and authority of a Collector of land revenue. The first Commissioner was Mr. D. Scott. Subsequently, in Regulation XXIII of 1817, Government expressly declared that the Sundarbans were the property of the State and asserted its right to the revenue of lands not included within the boundaries of estates for which a settlement had been made. In 1822 and 1823 Mr. Prinsep surveyed the line of forest from the river Jamuna to the Hooghly and divided all the forest lands between those rivers into blocks which he numbered, this being the beginning of the "Sundarban lots."

All the circumstances of the lands being made known by these surveys, attention was next directed to the claim of the State to demand revenue both from the recently reclaimed lands and also from the forest. The land owners on the contrary claimed to hold all these lands and the forest as part and parcel of their estates at the revenue fixed at the Permanent Settlement and free from increased revenue. Finally, the rights of the State over recent cultivation and over the forest were conclusively decided in favour of the State, and this right was fully stated as follows in Regulation III of 1828—"The uninhabited tract known by the name of the Sundarbans has ever been, and is hereby declared still to be the property of the State, the same not having been alienated or assigned to zamindars, or included in any way in the arrangements of the perpetual settlement. It shall therefore be competent to the Governor-General in Council to make, as heretofore grants, assignments, and leases of any part of the said Sundarbans, and to take such measures for the clearance and cultivation of the tract as he may deem proper and expedient."

Mr. William Dampier was now appointed Commissioner, and Lieutenant Hodges Surveyor, with jurisdiction over the whole of the Sundarbans in Khulna and Backergunge. They defined and surveyed the line of forest from the Jamuna up to the eastern limit of the Sundarbans during the years 1829 and 1830; and Mr. Dampier formally affirmed Prinsep's line in the 24 Parganas in 1832-33. "Prinsep's line" and "Hodges' line" are the authoritative limits of the then Sundarbans forest; while the map prepared by Lieutenant Hodges from his own surveys and those of his predecessors has been the standard map of the Sundarbans ever since. The subsequent administration of the Sundarbans will be dealt with in Chapter XI, and it will suffice

here to mention that the settlement of land with lessees has gone on steadily ever since, and almost the whole area available for settlement in this district has now been taken up.

One of the most important events in the subsequent history of the Sundarbans is the foundation of Morrellganj, which had also been an important factor in the development of the district. Some squatters had made a clearing in the forest there about the year 1840, but no further progress was made till Messrs. R. and T. H. Morrell bought three large blocks of land in 1849. The estate then consisted of dense Sundarbans forest and the first attempts to clear it were impeded by the timidity of the people. But very soon the proprietors gained their confidence, and labour poured in on all sides. By 1851 about 10,000 men were at work, in a short time a river frontage of 9 miles was cleared and brought under cultivation, and a considerable proportion of the men engaged in the work settled down as permanent cultivators. The undertaking was greatly facilitated by the advantages the land possessed, in being well raised and having excellent river frontages with plenty of fresh water. At the north-east corner, on the bank of the main river, and where two other rivers join it, the Morrells built a town which they called Morrellganj after themselves. They established a mart, which quickly became the most important in this part of the country; a police station, a sub-registration office and a dispensary were located there; and the neighbourhood was converted from jungle into a fertile country covered with rice fields and dotted with prosperous villages.

The value of this work may be gathered from the minute recorded in 1860 by the Lieutenant-Governor, Sir John Peter Grant, on the Report of the Indigo Commission. "What an enterprising European can do both for himself and for the people, when he marries his interest to theirs, is shown in a conspicuous manner by the evidence of Mr. Morrell. In 10 years Mr. Morrell has cleared 60,000 to 65,000 *bighās* (upwards of 20,000 acres) of Sundarbans jungle. He has granted his cleared land under permanent *pattās* at a rent of Re. 1-2 a *bighā* never liable to enhancement; he gets as many ryots as he wishes, but they repudiate the system of advances, fearing that "eventually they may have to take to *nil* or indigo," though they know of indigo only from common report. Mr. Morrell told me that the building of a good two-storied brick house on his grant was one of the most fortunate things he did, because it assured the *pattādars* and ryots that he would stay amongst them; and it will be seen in his evidence that the same people, who were so anxious to keep him near them, on one occasion, when his gardener had sown in his garden some

indigo seed that had been sent from Calcutta in a packet of seeds by mistake, on the plant growing up, "insisted upon having it pulled up and thrown away." Mr. Morrell has in 10 years created for himself an estate which cannot now be worth less than from £80,000 to £1,00,000, and, in doing so, he has covered what were 20,000 acres of uninhabited jungle with a happy and thriving population, anxious to keep him near them. This he has accomplished by working on sound principles, to the profit of the people instead of to their loss."

**FORMA-  
TION OF  
THE  
DISTRICT.**

Till 1882 Khulnā was included partly in the Jessore district and partly in the district of the 24-Parganas. A subdivision, the first established in Bengal, had been set up at Khulnā in 1842; its chief object, according to Sir James Westland, "being to hold in check Mr. Itaney, who had purchased a zamindari in the vicinity and resided at Nihulpur, and who did not seem inclined to acknowledge the restraints of law." The jurisdiction of the subdivisional officer extended not only over the present Khulnā subdivision, but also over almost the whole of the present Bagherhāt subdivision. The Bagherhāt subdivision was subsequently constituted in 1853. Both this and the Khulnā subdivision formed part of the Jessore district, while the Sātkhira subdivision, established in 1861, was included in the 24-Parganas. Eventually, the Local Government came to the conclusion that the formation of a Sundarbans district with its headquarters at Khulnā was absolutely necessary, in order to lighten the work in the great suburban district of the 24-Parganas, and to relieve the District Officer of Jessore of part of his heavy charge. The advantages of having the headquarters at the Khulnā terminus of the new Bengal Central Railway (now the Eastern Bengal State Railway) were many; and the same grounds which rendered it desirable that the Sundarbans should be connected by railway communication with Calcutta, pointed conclusively to the choice of Khulnā as the headquarters of the new district. The sanction of the Government of India and of the Secretary of State having been obtained, a notification dated the 25th April 1882, which took effect from the 1st June of the same year, declared that the new district should consist of the Sātkhira subdivision of the 24-Parganas, and of the Khulnā and Bagherhāt subdivisions of the Jessore district, the headquarters being at the town of Khulnā.

The Sundarbans tract to the south still remained, however, under the control of the Commissioner in the Sundarbans until 1905, when it was decided that it was no longer expedient to continue this arrangement. The appointment of a special officer for the Sundarbans in 1816 had been necessary both because the

country was extensive, wild and inaccessible, and the important work of developing its resources was beyond the capacity of the Collectors of the adjoining districts. It was felt that the necessity of having an officer with independent powers had disappeared, and that it was desirable that this tract should be administered entirely by the Collectors of the districts concerned. This was not a very great change, for, the administration had long been conducted by the District Officer, with the exception of making settlements and holding enquiries to see if the conditions of the settlement leases had been carried out. The District Officer already controlled excise, education, police, crime, *chaukidāri*, the opening out of communications, and other branches of administration, and it was now decided that he should also exercise control over the important matters connected with settlements. Accordingly in 1905 the Sundarbans Act (Bengal Act I of 1905) was passed, by which Regulation IX of 1816 was repealed, the office of the Commissioner in the Sundarbans was abolished, and his functions were transferred to the Collectors of the districts within which the Sundarbans are comprised.

The most interesting archaeological remains are found at **Archæo-  
logy.** Bāgherhāt in the extreme east of the district, where there are the tomb of Khanja Ali (1459 A.D.), the tomb of his *diwan* Muhammad Tahir, a large single-domed mosque, and another mosque with nine domes. There are many other ruined mosques on the way to the building known as Sātḡumbaz or mosque of 77 domes, a large oblong building covered by 77 domes with one tower at each corner. In the extreme west of the district there are some ruins attributed to Pratāpāditya at Iswaripur and close by at Tirkati and Tezkati. The foundation walls of other buildings are also met with in the cultivated tract; and the forest in the vicinity is said to contain several temples and mosques, old roads and tanks. Another trace of former cultivation in this part of the district is still found in a large embankment which extended from the Kholpetuā to the Kabadak river, a distance of three miles. The embankment is close to the northern boundary of Sundarbans lot No. 167 and south of the village of Pratāpnagar. Towards the east it is broken in places, but it is continuous on the west for a distance of more than a mile and is still 30 feet in height with a base of 90 feet. The place is called Garh Kamalpur, but no one knows who made the embankment or for what purpose it was erected.

\* Across the Kabadak river a large area is scattered over with bricks, and the foundations of old buildings are seen in several



places. When the jungle was cut down here nearly 50 years ago, several large tanks and the remains of an old road were discovered, all indicating that the place must have been once cleared and peopled. Here also were found 38 silver coins, two of which were ascertained to be coins of Ghiās-ud-din Balban, dated 1274 A.D. and apparently struck in Bengal, and of Nāsir-ud-din Muhammad. About 12 miles east and a little south of the ruins last referred to, on the east bank of the Marjal river, are the ruins of what appears to have been a fort, enclosed court-yard, or square, built of burnt country bricks, and enclosing a tank about 120 feet square. This is situated about 500 yards from the Marjal river in allotment No. 233. The most perfect wall was not more than five feet in height, and its extreme length was 380 feet. The cornice bricks, and those inside the arches, were cut or chiselled out with rough figures and ornamentations. There are also said to be ruins of various buildings in the interior of this island, and among others there is a mosque or temple said to have an arched roof, and to be in a tolerably good state of preservation. Twelve miles north in a direct line are some ruins at Masjidkur on the east bank of the Kabadak river. The name, which means the digging out of a mosque, was given to the place by the pioneers of cultivation who unearthed a mosque, which is still used by the local Muhammadans. The structure is clearly contemporaneous with the Sāt-gumbāz, and this is confirmed by the local tradition that the mosque was built by Khānja Ali, and by the fact that offerings are made at this mosque in the name of Khānja Ali, and that in the adjoining village of Amadi there are ruins which are said to have been the *kuchahri* or office of Bura Khān and Fateh Khān, lieutenants of Khānja Ali, as well as two tombs which mark their resting place.

Historically the remains mentioned above are of value. The mosques at Iswaripur and Masjidkur, the silver coins, which belong to the time of the Moslem Emperors, the Muhammadan names of such places as Tirkati and Tezkati near Iswaripur, the tradition that Iswaripur before Pratāpāditya's time belonged to Musalmān rulers of the Khān race, all point to the conclusion that the country east of the Jamunā was under Muhammadan rule at a comparatively early date.\*

The remains found from time to time in clearing forests and reclaiming land have given rise to the belief that the Sundarbans formerly supported a thriving population and was largely under

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\* *Antiquities of the Sundarbans, Statistical Reporter, 1878*

cultivation. To this belief may be ascribed the origin of the legend, mentioned in the field books of Lieutenant W. E. and Captain H. Morrieson nearly a century ago, that near the mouths of the Mālīnchā and Jamunā there is a palace which is still inhabited: during the stillness of night the great drums of the palace and the bells may be heard, but in the day time no such noise is noticed. This belief has been rejected by authorities such as Mr. Beveridge and Professor Blochmann. The latter writes—"I have a few words to say on the hypothesis which has often been started, that the whole of the Sundarban was once in a flourishing condition. No convincing proof has hitherto been adduced; and I believe, on physical grounds, that the supposition is impossible. The sporadic remains of tanks, *ghats*, and short roads point to mere attempts at colonization. The old Portuguese and Dutch maps have also been frequently mentioned as affording testimony that the Sundarban, even up to the 16th century, was well cultivated; and the difficulty of identifying the mysterious names of the five Sundarban towns Pacauli, Cuiptavaz, Noldy, Dupuria (or Dapara) and Tiparia, which are placed on the maps of De Barros, Blaeu, and Van den Broucke close to the coast line, has inclined people to believe that they represent "lost towns." The old Portuguese and Dutch maps prove nothing. They support the conclusion which I drew from Tolar Mals' rent-roll, that in the 24-Parganas and Jessore the northern limit of the Sundarban, omitting recent clearings, was in the fifteenth century much the same as it is now."

Mr. Beveridge also writes in his article *Were the Sundarbans inhabited in ancient times*—"This is a question which has excited a great deal of attention. The Bengali mind, as being prone to the marvellous and to the exaltation of the past at the expense of the present, has answered the question in the affirmative and maintained the view that there were formerly large cities in the Sundarbans. Some Bengalis also have suggested that the present desolate condition of the Sundarbans is due to subsidence of the land, and that this may have been contemporaneous with the formation of the submarine hollow known as the "Swatch of no ground." It seems to me, however, to be very doubtful indeed that the Sundarbans were ever largely peopled, and still more so that their inhabitants lived in cities or were otherwise civilized."

Mr. Beveridge also points out in this connection that the fact that Vikramāditya chose Jasor Iswaripur as a safe retreat is the

\**Geography and History of Bengal*, J.A.S.B., vol. XLII, Part I, 1873 (p. 231).

strongest possible evidence of the jungly nature of the surrounding country, for though it had been cultivated in the previous century by Khānja Ali, the experiment had proved a failure, and in the time of his successor (?) Chānd Khān the land had relapsed into jungle. He then sums up as follows:—"It seems to me that the Sundarbans have never been in a more flourishing condition than they are in at present. I believe that large parts of Bākirganj and Jessore were at one time cultivated, that they relapsed into jungle, and that they have soon been cleared again; and I have also no doubt that the Courts of the kings of Baklā and of Ciandecan imparted some degree of splendour to the surrounding country. But I do not believe that the gloomy Sundarbans on the surface of Jessore and Bākirganj were ever well peopled or the sites of cities" \*.

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\* J.A.S.H., vol. XLV, 1876.

## CHAPTER III.

## THE PEOPLE.

WHEN the first census was taken in 1872, the population of the district as now constituted was returned at 1,046,878.\* In the succeeding decade there was a small increase of by 3·1 per cent., the number of inhabitants rising to 1,079,948. The only thānas which shewed a decrease were Asāsuni and Morrellganj, where the decline was attributed mainly to the abandonment of clearances in and near the Sundarbans following upon the sale of the Morrell estate. During the next 10 years both thānas recovered their losses, and there was a general advance except in Kalāroā and Baitāghatā, where there was a slight falling off attributed to the fact that the population had reached the limit which the soil was capable of supporting. The net result was that in 1891 the total population was returned at 1,177,652, representing an increase of 9 per cent. During the next decade this advance continued, and the census of 1901 disclosed a population of 1,253,043.

Two points call for notice regarding these enumerations. The first is that the returns depend to a large extent on the labourers from other districts who happen to be temporarily in the district at the time of the census and whose number varies with the season. How greatly these temporary immigrants affect the figures in some parts may be realized from the fact that the decrease observed in the Asāsuni and Morrellganj thānas in 1881 was ascribed partly to the fact that "the census of 1872, having been taken early in the year, included a great number of reapers, who come from all parts to cut the rice in the Sundarbans of this district, and who had finished their work and returned when the census of 1881 was taken in a later month." If a census were to be taken in the hot weather, the population of certain parts would be found to be less than is actually returned, for the temporary immigrants would be absent, and only the

\* The district was constituted in 1881. In 1872 two of its subdivisions, Khulsi and Bāgherhāt, formed part of the Jessore district, and the third, Bākhirā, of the 24-Pargannas.

fixed and permanent population would be enumerated. Even in the cold weather a few days' difference in the dates of enumeration may make a considerable difference in the result, for the crop may be more plentiful and the harvest more forward in one year than in another, resulting in a larger influx of labourers.

The second feature which calls for notice is the number of persons accounted for by the boat population. In 1881 the latter represented 37 per cent. of the whole population, in 1891 over 30,000 were enumerated in boats, and in 1901 the number was 15,090. Even these figures do not include all the boating population. For the term "boat population" includes only those persons found sleeping in boats on the night of the census, and not that numerous class of boatmen, who, though spending their time afloat, come ashore to sleep every night, or those travellers or traders who moor their boats to the bank at nightfall at some convenient village and are thus enumerated among its inhabitants.

CENSUS  
OF 1901.

The results of the census of 1901 are summarized as follows in the Bengal Census Report. "The census of 1901 shows that the population has grown by 6·4 per cent, compared with 9 per cent. in the previous decade, and 3·1 per cent. in the nine years prior to 1881. This is the net result of an increase of 17·7 per cent. in the headquarters subdivision, and 6·6 per cent. in Bagherhat, coupled with a falling-off of 1·5 per cent. in Sâtkhirâ. In the latter subdivision again the decrease is practically confined to two thanas, Kalâroa and Asâsuni. In Kalâroâ it is due to the prevalence of malaria and to repeated attacks of fever. In this thana the vital statistics shew a considerable excess of deaths over births, while in the district at large the number of births reported exceeds that of the deaths. There has also been some emigration to the clearances in the Sundarbans, where there is a great demand for labour and wages are two or three times as high as in Kalâroâ. Asâsuni, which also shows a large decrease, has a very fluctuating population. The cause of the falling-off has not been clearly ascertained. For some reason the extension of cultivation in the Sundarbans is proceeding far more slowly in this subdivision, and in Bagherhat, than in the adjoining thanas of the 24-Parganas and of the Khulnâ headquarters subdivision. Sâtkhirâ itself, which shows a slight decline, has suffered from the diversion of the boat traffic between Calcutta and East Bengal to channels further south; the health of the people has also been unsatisfactory. The growth of the Bagherhat subdivision is normal and calls for no special comment. Cultivation is being steadily extended into the

shallow *bils* which form so marked a feature of this part of Bengal. In the headquarters subdivision the most noticeable item in the statistics is the increase in the population of Paikgachā thāna which has grown by nearly 50 per cent. during the decade. This is owing to the progress made in pushing back the jungles of the Sundarbans, and to the settlement of cultivators on the new clearances, which attract cultivators not only from other parts of the district, but also from Nadia, Jessore, Faridpur and other districts. The total number of immigrants has fallen off considerably since 1891, but they are more numerous by nearly 27,000 than they would have been, had no fresh settlers come in to the district. Taking the ebb and flow together, the district seems to have gained by the movements of the population during the decade to the extent of from 20,000 to 25,000 persons. It should be noted, however, that many of the Sundarbans cultivators are not permanent settlers, but continue to reside in their old homes, and only visit the Sundarbans when ploughing or harvesting operations are in progress."

The following table shows the salient statistics of the census of 1901 :—

SUBDIVISION	Area in square miles.	NUMBER OF		Popula- tion.	Popula- tion per square mile	Percentage of variation in population between 1891 and 1901.
		Towns	Villages			
Khulnā ...	649	1	929	401,785	619	+ 17.7
Hagherhat ..	679	..	1,045	363,041	535	+ 6.6
Satkhira	749	2	1,407	488,217	652	- 1.5
DISTRICT TOTAL	2,077	3	3,441	1,253,043	603	+ 6.4

In the table given above the density of population is shown as 603 persons to the square mile, but these figures exclude the Sundarbans with an area of 2,688 square miles; if this tract is included, the density of the district falls as low as 263 persons to the square mile. The Sundarbans tract, however, has scarcely any permanent population, except along a narrow belt, which abuts on and is practically part of the settled tract to the north. The inhabitants of this narrow cultivated belt are included in the police circles to which they lie nearest, and the only other inhabitants are a few fishermen, wood-cutters and hunters, living in its southern fastnesses and insignificant in number, whom it would be impracticable to enumerate.

GENERAL  
CHARAC-  
TERISTICS.

Density of  
popula-  
tion.

In the district, as a whole, the density of population is determined by the physical features of different tracts. The northern part of the Sātkhirā subdivision is a fairly densely populated tract, resembling in its general physical characteristics the adjoining thānas of Jessore, but the drainage is bad; there are numerous swamps, and malaria is always present. Here the Kalārōā thana supports 806 and the Sātkhirā thana 738 persons per square mile. Until 1901 Kalārōā was the most densely populated thāna in the district, but it has now changed places with Khulnā thāna, where there are 851 persons for every square mile. "I know by personal experience," wrote the Magistrate in 1891, "that all the land in the Kalārōā thāna has already been cultivated, and there is no room for any expansion of cultivation. While the southern thānas import labour largely for transplanting and reaping paddy, Kalārōā, like the neighbouring thānas of Jessore, which it resembles in many respects, exports it." He anticipated that the population of Kalārōā had reached its limit, and the decline observed in 1901 shows the correctness of his forecast.

The other northern thānas are also low-lying, and *bils* are large and numerous, but the country is more open and there is less jungle, while the stagnant pools and tanks, which are so common in north Sātkhirā, are rarely seen. In these thānas there is still room for expansion, and much of the *bil* land is capable of reclamation. Here the density varies from 419 per square mile in Baitāghatā to 851 per square mile in Khulnā. The southern thānas include large areas in the Sundarbans, where there is an immense quantity of fertile land awaiting the axe and the plough. The jungle is steadily being pushed back, and every year more land is being brought under cultivation. A great deal of the work of reclamation is carried out by persons whose permanent homes are elsewhere, but the number of regular settlers is gradually growing. Here the Rāmpāl thāna supports 388 persons per square mile and is the most thinly populated part of the district.

Migra-  
tion.

At the census of 1901, the number of residents of other districts enumerated in Khulnā was 65,717, representing 5 per cent. of the population. Most of these came from contiguous districts, especially Backergunge and Jessore, which supply many of the cultivators on new clearances in the Sundarbans, but a large number also came from Faridpur. The number of immigrants from these three districts alone was 48,482. Some of the immigrants have settled permanently in the district, but the excess of males shows that many are still domiciled elsewhere. Among



immigrants from distant places may be mentioned the Bunās, an aboriginal tribe, who have come from Bānkunā and Burdwān and settled in the neighbourhood of Khulnā. They migrated here with their women and children for the purpose of clearing jungle, and many remained to cultivate land on their own account.

The great majority of the immigrants, however, only come for a time to cultivate the marshy land which is so plentiful in the district. Such land is too low to be used for permanent habitation and it is accordingly largely cultivated by people, locally known as *dāwāls*, who come from other and more densely peopled tracts, erect temporary huts, and go away after growing and reaping their paddy. This temporary population is increased during the reaping season by a population of a still more temporary character, viz., the reapers, who return to their homes as soon as the harvest has been gathered. A number of fishermen also come every year from Chittagong, build huts in the Sundarbans, and remain for three or four months after the rains, catching and salting fish. Besides these, a fair number of up-country men come to the district to trade or to seek employment as constables, day labourers, door-keepers, grooms, sweepers, shoe-makers, etc., but they generally return to their homes after they have made a little money.

Generally speaking, the only immigration of any magnitude, which has been taking place in recent times, is that of cultivators from Backergunge who settle down on newly-reclaimed lands in Morrellganj. Professional men from Jessore also find employment in the courts and offices at Khulnā, but otherwise immigration is either very insignificant in its dimensions or ephemeral in character, e.g., a doctor comes from Hooghly, a pleader from the 24-Parganas, and a retired Deputy Magistrate from Calcutta, reapers come for a short time from Jessore and Nadiā, and boatmen pass through from Dacca and Pābna.

The volume of emigration is not large, only 25,883 or 2 per cent. of the population being enumerated in other districts at the census of 1901; and of these 19,683 were enumerated in contiguous districts. The struggle for existence has not yet become at all keen, except in thāna Kalāroā; both cultivators and labourers earn enough at home, and therefore do not find it necessary to go to other districts to earn a living. In Kalāroā wages are low, and the landless classes periodically go elsewhere to earn something to eke out the wages they get at home. They do not, however, find it necessary to leave the district, but only go to the southern thānas, where they help

to reap the plentiful harvests, and then return home, bringing with them the wages earned by them in money and kind. In the same way, Hindus of high caste living on the banks of the Kabadak, the Bhadrā or the Bhairab, who find that they cannot get a sufficient quantity of fertile land in their own neighbourhood, turn their eyes to the fertile south, obtain a *ganthi* or large allotment, settle it in plots with the actual cultivators, and maintain their families on the difference between the rents they receive and those they pay.

Towns and villages.

In Khulnā there is not much distinction between the urban and rural population, for there are no industries or manufactures necessitating the formation of towns, and almost the entire population subsists on agriculture. There are 3 towns, Khulnā, Satkhira and Debhāta, containing altogether 24,236 inhabitants, representing 2 per cent of the population. The remainder of the population is contained in 3,141 villages, the majority of which are of no very large size, for 46 per cent of the rural population live in villages containing under 500 inhabitants and 47 per cent. in villages with between 500 and 2,000 inhabitants. These villages are found almost entirely in the more settled tracts to the north of the district, the villages in the south being few in number and consisting generally of a cluster of cultivators' huts. In the Sundarbans they are even fewer and smaller, for the settlers there do not tend, as in other places, to group themselves into villages, this being probably one result of their having holdings so large that it is most convenient to live near them. But whatever the cause, many of the village names on the map represents no sites of villages as we usually understand a village, but wide stretches of waving paddy, with homesteads scattered about them, where the cultivators' families live apparently in perfect seclusion.

Language.

The language commonly spoken is the dialect of Bengali, called eastern or Musalman Bengali, the distinguishing feature of which is a large admixture of Persian and Arabic words in its vocabulary. A minor dialect is that known as east-central Bengali or the form of eastern Bengali spoken in this district, Jessore and the greater part of Faridpur. Hindi, according to the census of 1901, is spoken by 4,716 persons as compared with 3,540 in 1881, a fact which points to an increased demand for labourers from up-country.

Race-castes.

The population is almost equally divided between Muham-madans and Hindus, the former numbering 632,216 or 50·46 per cent. and the latter 619,123 or 49·41 per cent. There are

very few members of other religions, Christians numbering 1,275 and members of all other religions only 439.

Census statistics for the last 20 years show that the proportion of Muhammadans in the population is gradually decreasing, while that of Hindus is steadily increasing. This appears to be due to the fact that the Muhammadans make but few proselytes, though some Hindus may here and there lose caste and adopt the religion of Islām, and to the fact that a large proportion of the Hindus consist of castes of aboriginal descent, such as Chandals and Pods, who are extremely hardy, industrious and thrifty, while their habits, which are almost amphibious, specially qualify them for living in the fen country which forms so large a part of the district. It is true that a large proportion of the Musalmāns also are descendants of converted Chandals and Pods, but their conversion is said to have brought about changes which have rendered them unfit to compete with their unconverted congeners. In the first place, many have ceased to be fishermen, and consequently have given up the amphibious life which is of such great service to the Chandals and Pods; and in the next place, the consciousness that their religion is one of a race of conquerors and rulers, the polygamous habits which they have adopted, and the seduction of their females, have combined to impair their habits of hardihood, thrift and industry, and to render them pleasure-loving and indolent.

Muhammādāns preponderate in thanas Kalaroā, while their proportion to the total population is least in thanas Baitāghatā, Paikgacha and Asāsuni. These variations are probably due to their greater or less adaptability, and to the circumstances of the different thanas, and not to any loss or gain in the vitality of the two religions, which, so far as Khulnā is concerned, have almost ceased to be active forces. In Kalaroā, where the struggle for existence has become very keen, the Musalmāns are more inured to poverty and want than the Hindus, among whom there are no large hardy classes of semi-aboriginal descent, like the Chandals and Pods, who would probably have competed successfully with the Musalmāns. Similarly, in Baitāghatā, Paikgachā, and Asāsuni, the comparative paucity of Muhammadans is attributed to competition with the Chandals and Pods.

There appears to be little doubt that this district was originally peopled by the Chandals and Pods, the former occupying the eastern and the latter the western half of it. In all probability, they were originally hunters and fishermen, the Pods following the latter calling almost exclusively, while some of the Chandals were hunters also. When the higher Hindu castes migrated into

the district, they occupied the comparatively high lands on the banks of the rivers; while the Chandals and Pods were driven into the jungles to the south of the district, or to the low marshy tracts between the different rivers. Thus, we find the high caste Hindus settled mainly along the banks of the Jamunā, Betnā, Kabadak, Bhairab, and along the Naukhali and its continuation, the Sātkhirā Khāl—the former of which must have been a river of some size at one time, though it has now silted up; while the Chandals and Pods live in the intervening marshes and in the jungles to the south. Apparently the only case in which high caste Hindus penetrated very far south was when Pratāpāditya founded Iwaripai, and thus seems to have been due to the fact that he was in search of a safe refuge for himself and his adherents, and went further afield than he would have otherwise done.

**Christians.** Of the 1,275 Christians enumerated in 1901, no less than 1,228 were natives, the great majority being converts of the Baptist Mission, which has been at work in this district for about 40 years. At first, the headquarters of this Mission were at Jessore, the missionary in charge there visiting the Christians living in the Sundarbans, but as the Christian community increased, a separate missionary was appointed for Khulnā. The Mission now has 18 churches and 24 schools in the district and carries on its work mostly amongst the cultivating classes in the Sundarbans. The Oxford Mission also has a station at Shelabuna, a Sundarbans village situated on the Passur, about 30 miles south of Khulna; and there are some Roman Catholic Christians at Mālagāchi in the Sundarbans, who are visited occasionally by their priests. The number of Christians has increased considerably in recent years, rising from 747 in 1881 to 963 in 1891 and to 1,275 in 1901. Nearly the whole number are inhabitants of thānas Khulnā, Paikgāchā and Rāmpāl.

Some  
popular  
beliefs.

In a district such as Khulna, where a large proportion of the population consists of semi-Hinduized castes of aboriginal descent, where the people suffer from fever and other diseases in the more settled parts, and where attempts to reclaim the waste are endangered by the attacks of wild animals, it is not altogether surprising that the more ignorant should believe in spirits or deities, who can be induced, if duly propitiated, to ward off disease and to protect them from danger in the forests. Among the godlings of disease two may be mentioned—Jwara Nārāyan and Sitalā.

Jwara  
Nārāyan  
and  
Sitalā.

Jawara Nārāyan, also known as Jwara Bhairab and Jwarāsur, is the name given to the fever godling. He is said to have been specially created by Siva to fight on the side of Bān

Rāja, when appealed to by that monarch for help against Krishna's invading army. His image is of a sky-blue colour, with three heads, three feet, six hands and nine eyes. He is worshipped mainly by the lower castes with the aid of a Brāhman priest, when malarial fever is prevalent or when a member of the family recovers from a dangerous illness. Goats are sacrificed, and offerings are made of rice, fruit, milk and sweets. The worship is performed on a Tuesday or Saturday at some place outside the village, and the idol is left there afterwards. Sitalā is the well-known goddess of small-pox, but in Khulnā she is regarded by the Pōds, not merely as the goddess of small-pox, but as their main deity. If a person is carried off by a tiger, or his crops are destroyed by wild animals, it is thought that it is because he has incurred the displeasure of Sitalā.

An even more curious instance of superstition is the exorcism of wild animals in the Sundarbans, of which the following account is condensed from an article by Mr. D. Sunder, formerly Commissioner in the Sundarbans\* :—

Exorcism  
of wild  
animals.

Those who have visited the Sundarbans between the months of October and May have observed the brisk trade which is carried on during that period in timber. Wood-cutters come in boats from Barisal, Khulnā, Faridpur, Calcutta and other districts, and enter the forests of the Sundarbans for the purpose of cutting timber. These places are full of man-eating tigers, and the loss of life that annually occurs from the attacks of these brutes is so heavy that nothing will persuade wood-cutters to proceed to the jungles without their *fakir*. He is the one person who is believed to possess power to disperse tigers, and also to prevent them from attacking anybody or causing loss of life. The belief in the power of the *fakir* is so great that wood-cutters and others declare that even crocodiles, which are also the cause of great loss of life, are under his control. It is said that he can make them rise or sink in water by his charms, and by his exorcisms close their mouths and prevent them from doing any harm.

No work is begun in the forests by wood-cutters, until the *fakir* has gone through his charms and incantations, and has performed a ceremony for the dispersion of all noxious animals. On arrival at the block of land selected for the wood-cutting operations, the *fakir* repeats a charm for the safety of the boat and then goes ashore with the wood-cutters and select a piece of ground on which to propitiate the deities. The jungle is cleared there, and the *fakir* makes a circle on the ground with his right

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\* *Exorcism of Wild Animals in the Sundarbans*, J.A.S.B., Part III, 1902.

foot and then repeats more incantations. After this, he builds seven small huts, with stakes and leaves, within his circle. Beginning on the right, the first hut is dedicated to Jagabandhu, the friend of the world, and the second to Mahadeva, the destroyer. The third is assigned to Mansa, the goddess of snakes; next to it a small platform is erected in honour of Rupapori, a spirit of the jungle; and beyond this again is a hut divided into two compartments—one for Kālī, the other for her daughter Kalmāyā. Then there is another small platform, on which offerings are made to Orperi, a winged spirit of the jungle, after this is a hut with two compartments, one being for Kāmeswari and the other for Burhi Thakurani, and then a tree, called Rakshya Chandī (another name for Kālī), the trunk of which is smeared with vermilion. No offerings are made to it. Then come two more huts, with two compartments in each and flags flying over them. The first hut is reserved for Ghazi Sāheb and his brother Kālū, and the next is for his son Chawal Pir and his nephew Rām Ghazi. The last deity propitiated is Bāstū Devatā (the earth), who has no hut or platform, but receives offerings placed on plantain leaves on the ground. The offering to the different deities are simple enough, consisting of rice, plantains, coconuts, sugar, sweetmeats, etc.; *chirāghs* or small earthen lamps are lit; pots of water covered with mango leaves and decorated with an image of the deity in vermilion are put out; and flags are hung over the huts.

When everything is ready and the offerings have been arranged, the *fakir* retires to purify himself. He has a bath, and returns wearing a *dhoti* provided for him by the wood-cutters, with his hands, arms, and forehead smeared with vermilion. Then, with hands folded before his face, he goes on his knees, bows his head to the ground, and remains in this attitude for a few seconds before each of the deities in succession, offering up prayers to each of them. After finishing his prayers, the *fakir* proceeds to ascertain whether a tiger is present in the locality or not, bidding it roar on the right or left according to its position. He then blows over his arm, and spans it from the elbow to one of his fingers. If the span meets the end of any finger exactly, the *fakir* waits a few minutes and spans a second time. If the span fails to meet the same finger exactly, it is a sign that a tiger is present and the *fakir* has to drive it off. He is said to be able to do this by repeating an incantation:—“In the name of my brothers Hingli, Bingli and Mangala, and the horses of Ghāzi Sāheb, also in the name of Barkat (God). O mother Kāmeswari, thou art uppermost in my

mind. I have put Azrael, the rider, on the backs of the tigers and tigresses of this jungle. Go eastward, thou of colour of fire; go eastward or westward, go to the right-about, I command thee, and feed thyself by killing deer and pig. If this my charm fails, may the top-knot of Mahádeva fall at the feet of Káli." Hingli, Bingli and Mangala, mentioned in this charm, are said to be deities of the jungles and the fathers of tigers, while Azrael is alleged to be a spirit who always rides on the backs of tigers.

The *fakir* then repeats charms for the protection of the wood-cutters and himself. After this, in order to close the eyes of the tiger, the *fakir* repeats an incantation, beginning—"Dust! dust! The finest dust be on thy eyes, O tiger and tigress." Special charms are repeated, if a tiger is seen in the jungle prowling anywhere near the wood-cutters, or is believed to be in their vicinity, or if the growl of a tiger is heard anywhere near the place where wood-cutting is going on. "That the *fakir* is thoroughly believed in by wood-cutters," writes Mr. Sunder, "there is no doubt, and it is equally certain that his charms and exorcisms give them courage to enter the forests and embolden them to work there, notwithstanding the variety of dangers by which they are surrounded. Without him they would be utterly helpless. That his exorcisms and incantations have little effect has been proved, for it often happens that the *fakir* himself, instead of the wood-cutters, is carried off by the tiger."

Mr. Sunder also mentions some quaint instances of superstitious beliefs about tigers common among the people who inhabit or work in the Sundarbans. "There is a superstition that the tongue of a tiger is a sure remedy for enlarged spleen. It may be taken in two ways. A small piece should be cut and put within the upper part of a ripe plantain, and the patient should bite that part of the plantain and swallow it the first thing in the morning, for five consecutive days. Another way is to grind a bit of the tongue with a peppercorn into a paste, mix it with a little *hukkah* water, and drink it every morning for seven days. The whiskers of a tiger are considered to be a cure for foot-and-mouth disease among cattle. A few hairs of the whiskers should be tied in a piece of cloth to a leg of the sick animal, and it is believed that all vermin on the cattle will instantly drop off. The fat of a tiger is also much sought after, for it is believed to be an infallible remedy for rheumatism. It should be rubbed over the affected parts of the body night and morning. The skin of a tiger is considered to be a cure for ophthalmia. It should be burnt and ground into a paste with *hukkah* water and applied all



round the affected eye. Tiger claws are often worn by men and women as a charm against attacks from tigers. Children sometimes wear tiger claws mounted on silver as a charm against the evil eye.

"When a tiger carries off a *wānphi* of a boat, the helm used by him is removed from the boat and planted with the blade upwards on the spot where the man was killed, and a piece of white cloth, with some rice tied in a corner of it, is attached to the helm. When a boatman is killed by a tiger, his oar is planted, blade upwards, on the place where he was attacked, and a white flag, with some rice tied in a corner of it, is fixed to the oar. If any person attempt to remove either the helm or the oar and fail to draw it out of the ground by a single pull, it is believed that he will be killed by a tiger; but nobody ever interferes with the simple memorials to the dead, which are seen on the banks of streams and in the jungles throughout the Sundarbans." \*

Adoration  
of *pirs*.

Ghāzi Sāheb and his brother Kala mentioned in the above account are said to have been Muhammadan *pirs* or saints, who had complete power over all living things. It is believed that they possessed the power of bringing to pass whatever they desired, and that tigers would come to them or disperse at their command; also that they used to ride about the jungles on tigers. They are venerated both by Muhammadans and Hindus, and whenever any person desires to enter any jungle, he first bends to the ground, with hands folded before his face, and says: "In the name of Ghāzi Sāheb." Having done this, he goes into the jungle, believing that Ghāzi Sāheb will keep him perfectly safe. *Fakirs* and others are unable to say who Ghāzi Sāheb was; but in the Bengal Census Report of 1901, Mr. Gait writes as follows:—"Zindah Ghāzi from Zaudik-i-Ghāzi, 'conqueror of infidels,' rides on a tiger in the Sundarbans, and is the patron saint of woodcutters, whom he is supposed to protect from tigers and crocodiles. He is sometimes identified with Ghāzi Miyān and sometimes with Ghāzi Madar. One Muhammadan gentleman tells me he is Badiruddin Shāh Madar, who died in A. H. 840 fighting against the infidels. Songs are sung in his honour and offerings are made after a safe return from a journey. Hindu women often make vows to have songs sung to him if their children reach a certain age. His shrine is believed to be on a mountain called Madaria in the Himalayas."

Another *pir* of great local repute is Khān Jahān, or as he is known locally Khānja Ali, the warrior saint of the Sundarbans, whose history has been given in the previous chapter. Various

\* *Excursion of Wild Animals in the Sundarbans*, J.A.S.B. Part III, 1903.

traditions cling to his name—among others, that he became pious in his old age and entered his tomb while still alive to escape from a punitive force sent against him by Jahāngir. He is now regarded as a saint; miraculous cures are said to be effected at his tomb; and there is a special yearly festival when people come to make offerings.

According to the census of 1901, no less than 291,785 Mubam-  
madans are Sheikhs and 284,573 are Atrāf or Ajlāf, the only  
other class with more than 10,000 representatives being Jolāhās,  
who number 26,937. The higher classes form a very small  
minority, only the Pathāns (9,183) and Saiyads (3,370) numbering  
over 1,000.

MUBAM-  
MADAN  
CLASSES.

Locally, however, the most common classification is that of Ashrāf  
Ashrāf and Atrāf. The former are the descendants of pure  
Musalmāns, who came into the district from Northern India; the  
latter are the descendants of semi-Hinduized aborigines, prin-  
cipally Chandāls and Pōds, and of low caste Hindus, who were  
converted to Islām. The word Ashrāf is the plural of Sharif,  
and the designation means therefore the patricians or nobles,  
while the word Atrāf, which is the plural of *tarāf*, is commonly  
understood as meaning the common people or the masses, the  
low born or the plebeians. The people to whom it is applied do  
not demur to its use and frankly admit their inferiority to the  
Ashrāf. They do not, however, know or admit that they are  
descendants of converts to Islām; according to them, they are  
the tillers of the soil, while the Ashrāf do not cultivate the land  
with their own hands. The latter title is scrupulously confined to  
those families who are pure Musalmāns by extraction, and it is  
only they who use the tribal titles of Saiyad, Mīr and Khān.  
The Atrāf carefully avoid the tribal titles used by them, except  
that of Sheikh. In addition to the title of Sheikh, which  
serves to mix up the Ashrāf and Atrāf to some extent, the latter  
have distinctive titles of their own, such as Sardār, Ghāzi, Mandal  
or Moral, etc. As in the case of the Hindus, the Ashrāf who  
first migrated into the district took up their abode on the banks of  
the rivers, while the Atrāf, like their unconverted brethren, dwelt  
in the jungles in the south of the district or in the marshy tracts  
which lie between the rivers.

The only Hindu castes numbering over 25,000 are the Chandāls, Hindu  
Pōds, Kayasths, Kaibartas and Brāhmins. A brief account of  
each of these castes is given below :—

CASTES.

By far the most numerous Hindu castes in Khulnā are the Chandāls  
Pōds and the Chandāls, or as they now call themselves, Namās or  
Namāsūdras. The former number 190,507, and the latter

and Pōds.

105,495; and between them they account for nearly one-third of the total Hindu population. The Pods are described as being the most hard-working and thrifty people in the district, and their habits and mode of life as exceptionally well-suited to the circumstances of the country in which they live. They are, moreover, peace-loving and law-abiding, and not at all litigious. The Chandāls, who, with the Pods, are believed to have been the original settlers of the district, are, in their habits and modes of life equally well-suited to the circumstances of the district, but have not increased in the same proportion. They are less thrifty than the Pods and have probably always been more pugnacious and less peaceful than the latter. At any rate, the less advanced members of the Chandāl caste are now extremely turbulent; and with the Musalmāns, many of whom are descended from the same ancestors, they are responsible for most of the riots that take place in the district.\*

At the same time, it should be stated that, as a community, the Chandāls or Namasūdras shew considerable aptitude for organization and that the ideals pursued by the better classes among them seem praiseworthy. As an instance of this, may be mentioned a conference recently held (in March 1908), which was attended by Namasūdras from Khulnā, the adjoining districts, and some districts of Eastern Bengal. From the published reports it appears that its objects were the spread of education, the establishment of a permanent fund, and the removal of social evils. In pursuance of these objects, the following resolutions were passed:—“(1) That the Namasūdra conference be made permanent by yearly meetings to be held in different districts for the discussion of social matters and the spread of education. (2) That a village committee be formed in every Namasūdra village, and unions of 15 such villages, and a district committee in every district. (3) That for acquiring funds for a Namasūdra contribution fund, village committees, unions and district committees be authorized to collect subscriptions. A handful of rice should be set apart before meals in every family, and collected weekly by the village committee. Every member of village committee will pay a monthly subscription of one anna, of unions two annas, and of district committees four annas. Three per cent. of the expenses incurred in *śrāddha*, marriages and other occasions must be reserved for this fund. (4) That as some active measure should be adopted towards social reform, it is resolved that any Namasūdra marrying his son under

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\* The above account is derived from the District Census Report of 1891.

20 or daughter under 10 will be excommunicated. The committees and unions must be specially careful about strict compliance with this resolution."

The following story regarding the origin of the Pods and Chandāls is current in Khulnā:—A beautiful girl succumbed to the blandishments of a low-caste lover and gave birth to a son. The intrigue and its result were kept secret, and in due course the girl was married to a man of her own rank in life. She had several other sons, who were brought up in comfort, while her first-born shifted for himself as best he could. When the legitimate children grew up, they learnt the story of their mother's frailty and persecuted their half-brother in all possible ways. Once, when he was away from home, they pulled up his paddy seedlings and planted them upside down. This was more than the bastard could bear, and he was about to commit suicide when the goddess Lakshmi appeared and caused the plants to bear a crop of golden grain. The bastard is said to be the ancestor of the Pods, while the legitimate sons were the forebears of the Chandāls \*

The Kāyasthas, who number 39,385, are chiefly Dakshin Rārhis, Kāyasthas. except those who live in the south and west of the Sātkhirā subdivision, who are principally members of the Bangaja sub-caste. These latter belong to the Tākī Samāj, and acknowledge as their leaders the Babus or Rājās of Nunnagar, who are said to be the descendants of Kachu Rai, the cousin of the celebrated Pratāpāditya.

The Kaibartias, who number 36,167, are agriculturists and fishermen, who in many respects possess qualities similar to those of the Pods. But they are not so well-suited to the circumstances of the district, as they cannot adapt themselves in the same manner to land subject to be inundated by salt water. Kaibartias.

The Brahmans of the district are mainly Rārhi, with a small sprinkling of Bārendra Brāhmans. Besides the Rārhi and Bārendra Brāhmans found all over the district, there is a small colony of Kānyakubja or Kanaujā Brāhmans in the villages of Gairā and Chandanpur close to Chānduriā in its extreme north-western corner. Some of these families appear to have been established in their present homes for four or five generations, while others say that they immigrated seven generations ago. The head of one of the former families states that his ancestors first came to, and settled in, Murshidābād; but later on, during the troublous times of the Marāthā invasions, they sought Brahmans.

and found shelter in the locality in which they have since been established.

**Baidyas.** The other high castes have but few representatives, and it is noticeable that the Baidyas, who are so numerous elsewhere, number only 1,641. They are almost entirely Rārhīs and appear to have been established in this district in comparatively early times. Most of the leading families of this caste have some tradition to the effect that they came from other districts to the north and west, but they cannot give any definite information on the subject.

**Pirāliā.** Among other castes found in Khulnā may be mentioned the Pirāliā, the descendants of Hindus who became Muhammadans because they were outcasted for having been forced to taste or smell forbidden food cooked by a Muhammadan. Some only of the Pirāliā are Muhammadans, and many of them still retain Hindu beliefs and customs. Others have succeeded to a certain extent in recovering their original caste and have remained Hindus. They are said to be named after a Brāhman apostate, named Pir Ali, the *diudān* of Khān Jahān or Khānja Ali, who ruled in Khulnā about four centuries ago. Tradition says that he became a Muhammadan in consequence of a trick played upon him by Khānja Ali. The story goes that during the Ramzān the Brāhman presented Khānja Ali with a bouquet of flowers, and when he inhaled the perfume, had the imprudence to reproach him for breaking the fast, saying "In our *Sāstras*, it is written that smelling is half eating, (*aghrdnam ardhā bhōjanam*).” The Nawāb took a grim vengeance. Some time afterwards, he gave a banquet to which he invited the Brāhman, and when the latter entered the room, had a door opened, behind which a steaming broth of beef was being prepared. The unfortunate Hindu at once raised his cloth to his nose to keep out the polluting odour, but his attempt was vain and the Nawāb taunted him in his own words:—"Let me remind you that, according to your *Sāstras*, smelling is half eating.” The Hindu’s caste was gone, and he was obliged to turn Musalmān, adopting the name of Muhammad Tahir, though he is more generally known as Pir Ali. It is said that the great Tagore family of Pāthuriāghātā in Calcutta are descended from the son born to him while still a Brāhman.\*

**SOCIAL  
CHARAC-  
TERISTICS.**

The dietary of the great majority of the people is a simple one, consisting principally of rice, fish and vegetables, but Muhammadans indulge in animal food when they can afford it.

\* See also *Hindu Castes and Sects* (pp. 119-124) by Jogendra Nath Bhattachārya.

As a rule, the first meal is taken in the morning before the Food-work of the day begins; there is a slight repast at noon; and all finish off with a meal about nine o'clock at night.

The ordinary dress of a well-to-do man consists of a waist-clothing. cloth (*dhuti*), a cotton sheet or shawl (*chādar*), and sometimes a sort of coat (*pirān*). A cultivator in average circumstances clothes himself in a waistcloth, and a scarf (*gāmuchā*) which he wears over his shoulder, the material being of stouter and coarser cloth than that of a shopkeeper's dress. In the cold season, the shopkeeper wears a *chādar* or shawl of broadcloth, about 3½ yards in length, not made up in any way, but simply cut from the piece; while the cultivator wears a *chādar* of stout cotton cloth, with a *kānthā*, or large cotton quilt, as a covering at night. Coats, vests, shirts and comforters are now sometimes used even by cultivators and boatmen, and cheap imported woollen wrappers are gradually replacing country-made cotton *chādurs* for winter wear. By women the *sāri* is universally worn, one end being draped over the head and shoulders and fastened to the waist piece.

The houses are not clustered together in villages, as that term is understood in other parts, but each is practically a homestead, standing in its own little patch of land and surrounded by a small orchard of fruit and palm trees. The highest ground available is selected; and where the site is low, it is laboriously raised by excavation, with the result that there are hollows and pits in every compound, which in the rains are filled with stagnant water. A respectable shopkeeper's house is built of *sundri* posts, bamboo, and reed mats. The floor, which is of mud, is raised two or three feet above the surface of the ground. The sides of the house are made of reed mats, with spilt bamboos laid across, which are sometimes painted black. The roof is thatched with straw, *san* grass (a slender long grass which does not easily rot in the rains), and *golpātā* or the leaves of the *hantāl* or wild date palm. The hut consists of one room about 30 feet long by 15 feet broad, with narrow verandahs in front and at the back, with mud steps leading to them. It has usually two doors placed opposite to each other, the panels being set in wooden frames. On each side of the door are windows to admit air and light. In addition to this building, a shopkeeper has also a cooking-house, where he and his family take their meals, a cow-shed, and two or three granaries (*godās*) for storing rice. These are situated at a short distance from the shop, but the whole of the buildings forming the homestead are surrounded by a fence composed of reeds plaited together.

The walls of the cultivators' houses are built of mud or consist of reed mats, with bamboo or *garán* posts, the roof being thatched. The floor is made of mud, generally raised about three feet above the level of the outside ground, but in the better class of houses floors raised to the height of six or eight feet are not uncommon. The house of a husbandman in moderate circumstances has usually about five rooms; the principal room has a narrow verandah in front, with mud steps leading up to it. On one side is a small room used as a kitchen: sometimes, however, the cook-room is a separate hut. On the other side is another small room where the women of the family husk rice; and there are also a granary and a cow-shed, detached from the house.

In the town of Khulná, as well as in the interior, many substantial houses, generally one storeyed, have of late been constructed by well-to-do people, especially zamindárs and pleaders; but the middle and poorer classes live in huts as described above. The number of brick-built houses is gradually increasing.

Amuse-  
ments.

The principal amusements of the people consist of various musical and theatrical entertainments, boat races, horse races, etc. A popular entertainment consists of matches between *kabudás*, i.e., parties (*dal*) of singers (*kabi*), of which there are reported to be 300 or 400 in this district. Each party consists of eight or ten men, with a headman, who is the real *kabi*. Two rival parties are hired to give a performance on some festive occasion, either in private houses or at common meeting places in the villages, the charge being Rs. 20 or Rs. 25 a night. The headman of one party recites impromptu verses, which are repeated by his followers, and then the other party follows suit. The verses recited generally deal with some religious theme, but in their keenness to outdo one another, the performers, at least in public places, rally and ridicule their rivals with rhymes of an abusive character. The whole performance is thus often strikingly like that described by Horace: "*Fiscennina per hunc inuenta licentia morem Veribus alternis opprobria rustica iudit.*" The *kabis* are generally recruited from low class Hindus, but there are some Muhammadans among them; leading *kabis* are found at Mansá, Fakirhat and Boaliá.

The *jatra* is an entertainment of a higher class, consisting of the performance of a mythological piece, generally selected from the *Ramayana* or *Mahabharata*. The performers are organised parties of musicians called *játrawáds*, each party consisting of men and boys who represent different characters; the female parts are taken by some of the boys or men with clean-shaven



faces. They sing, dance, and also give musical concerts. The *jātrāwāds* are professional men, who are hired out to give performances in the houses of well-to-do people on the occasion of the Durgāpūjā or other religious and wedding festivities. They are also engaged for the *bārayāris* organized by the people of one or more neighbouring villages, who raise subscriptions amongst themselves to pay their fees. Usually, the performances are given at night, and continue for several nights; they are keenly enjoyed by the simple rustics, male and female, Hindu and Muhammadan. There are three or four local *jātra* parties, and occasionally parties of special skill are engaged from other districts or Calcutta. They charge Rs. 50 to Rs. 100 for a night's performance. The educated middle classes in Khulnā, Bāgherhāt and Sātkhirā, and in advanced villages like Senhāti, Muḡhar and Māgurā, have also formed themselves into amateur dramatic societies, their performances being given at night in houses built and set apart for the purpose.

The *bārayāris* mentioned above also play an important part in village life, nearly every big village having a place called the *bārayārītālā* for their performance. Several influential men of one or more villages form themselves into a committee, styling themselves Pāndā, and raise a fund for the performance of the *bārayāri*. When a sufficient sum—it may be Rs. 100, Rs. 200, or more—has been collected, they decide on the best way to spend it. As a rule, a small portion is spent on the *pūjā* of some god, godling, or goddess, such as Kālī, whose image is set up under a shed, in front of which bamboo posts are erected, forming a quadrangle. A *shāmidānā* or canopy is spread over them, and mats and *daris* are laid out for the audience; enclosed seats are also provided for *pardānashin* women of respectable families. Some goats are sacrificed before the image, and the subscribers then partake of a feast provided from the *bārayāri* fund. Either a *jātrā* or *kabi* party, or both when funds permit, are hired, and their performances are enjoyed for several days and nights by the people of the neighbourhood, who come in large numbers to see them. In the village of Tilak, opposite Khulnā, a *bārayāri* on a grand scale is celebrated every year and is the occasion of a large fair. Muhammadans also willingly join in the *bārayāris*, although Hindus are the principal organizers, Hindu idols are worshipped, and the *jātra* and *kabi* parties perform Hindu mythological pieces.

Another musical entertainment is called *ghāzīgan*, which consists of songs sung in honour of Ghāzī after the cultivating season is over. The Muhammadans at this time go about in

small bands of 8 or 10 men singing such songs on receipt of small fees. The Hindus similarly form *bhajan*dār parties, i.e., 10 or 12 persons form themselves into a party and sing songs in praise of Siva and Gauri during the Nilpūjā festival to the great delight of the rustics.

Here, as elsewhere, kite-flying matches between parties of about four men are a popular amusement. The matches are governed by rules regarding the size of the kites, the length of the string, etc. The strings are coated with powdered glass stuck on with glue, and each party tries to manœuvre its kite so as to cut the string or, even better, the end of the rival kite. Races between country-bred ponies of different villages take place during various festivals, the principal villages engaging in this sport being Chhāglādaha, Solpurhāt, Ghāzirhāt, Siromani and Daulatpur. Swimming matches are also general.

Boat races are even more popular, as is only natural in a district where almost every man is a boatman. They are held practically all over the district, and among other places at Khulnā, Kalābir, Katenga, Chhaachādaha, Nagorkandi, Laupāla, and Bāgherhāt. The racing canoes or boats are 50 to 100 feet long, and are manned sometimes by as many as 50 pairs of rowers. The villagers who form the crew come each with his own paddle, for practically every man in this fen district has a paddle of his own. These races are a picturesque sight and give rise to the wildest excitement. The boats sweep along with great speed, while the rowers keep time to the songs of a man standing up in the boat, and catch up the refrain.

#### Festivals.

Numerous festivals and fairs are held at different places in the district. Among these may be mentioned the fairs held at Budhhātā in the Sātkhirā subdivision during the Hindu festivals of Rājāstrā, Durgāpūjā and Kālīpūjā; at Asāsuni during the Doljāstrā; at Jhāudangā during the Snānjātrā; at Khesrā during the Rājāstrā; and at Kalinā and Nunnagar in alternate years during the Doljāstrā held in honour of Gobind Deb, whose idol was brought from Orissa by Pratāpāditya, the Hindu hero of the Sundarbans. Similar fairs are held at Nawāparā and Sankarkhālī, two small villages in the Bhalukā *pargana*, during the Durgāpūjā, Doljāstrā and Rathjāstrā; at Sātkhirā on the occasion of the Doljāstrā, which lasts for 8 days; at Kapilmuni in the Khulnā subdivision in the middle of March, for 13 days; and at Madinā in the same subdivision in March for 3 days. The following fairs are held annually in the Bāgherhāt subdivision:— at Maghiā in April for one month; at Nagorkandi in the middle of November for 15 days; at Bāgherhāt on the occasion of the

Srīpanchami for one month; at Laupāla during the Rathjātrā for nine days; at Chitalmāri in April for 15 days; at Karapārā on the 30th Chaitra (April) for 4 days; at Baniaganti on the 10th Paus (December) for 4 days; at Lokpur in October for 10 days; at Rāmpāl on the 1st Phālgun (February) for one month; at Malgazi in the latter part of Phālgun (March) for 10 days; at Morrellganj in Baisākh (April) for one month; at Banagrām in Chaitra (March) for 10 days; at Badhal in Phālgun (February) for 15 days; at Rangdiā in Chaitra (March) for 15 days; at Kachikātā in April for 10 days; and at Mansā in November for 15 days.

## CHAPTER IV.

## PUBLIC HEALTH

GENERAL  
CONDI-  
TIONS.

It is impossible to describe Khulnā as a really healthy district, but on the other hand it is not conspicuously unhealthy, and it is undoubtedly more salubrious than the northern districts of the Presidency Division, viz., Jessore, Murshidābād and Nadiā.

The most unhealthy part is the northern tract adjoining Jessore, in which conditions are similar to those obtaining in that district. This tract is traversed by a number of rivers, which have been raised above the level of the surrounding country by the gradual deposition of silt, and the villages generally cluster in their neighbourhood. Between the river channels there are numerous marshes, and during the rainy season large areas are under water either from the overflowing of the rivers or from local rainfall. On the drying up of the land extensive *bils* remain, many of which contain water all the year round. Some are connected with the river by *khāls* or creeks and are regularly flushed out at flood time; but in other cases the *khāls* have partially silted up, so that they are flushed only when the floods are unusually high; while others again are unconnected with the rivers, and the water in them lies stagnant for the greater part of the year.

In this tract the villages generally consist of a number of separate homesteads scattered over a considerable area. The houses are built of split bamboo and are usually raised on a mud plinth, cattle-sheds are built in close proximity to them, and the whole collection of huts encloses a central courtyard, towards which they face. The mud for the plinth, etc., is taken from pits dug in the immediate neighbourhood, and after the rainy season these pits remain full of water for a long time. The villages thus abound in patches of broken ground and hollows, which get filled with water and rubbish, and become overgrown with rank vegetation. High grass and underwood grow rank in the groves which surround each little cluster of homesteads, the soil remains damp for a long time after the rains, and the ponds and casual collections of water in the villages

evaporate very slowly. The supply of drinking water, moreover, is often bad. Villages on the banks of rivers take it directly from the stream, but in such cases it is generally obtained at a spot which is also used as a bathing *ghat*. If there is no river or stream close by, the villagers get their drinking water from tanks, which are also used for washing and other domestic purposes, and are usually dirty and overgrown with weeds. Should there be not even a tank, the drinking water is drawn from some pool, and is frequently unfit for consumption.

Conditions are better in the central portion of the district, for though the land is generally marshy and water-logged, it is more open and the jungle is less dense. It cannot be said, however, that this tract is a desirable one for residence, for it is practically a fen country. The villages are necessarily built along the higher land adjoining its numerous waterways, the water-logged tracts in the interior being unfit for human habitation. Marshes covered with rank vegetation abound, and it is not always possible to procure good drinking water. The general climate is better, however, than in the north, though sickness is common from August to September, and fever, with diseases of the liver and spleen, is often present.

To the south of the cultivated area human habitations are few, as there are no suitable sites for villages; and fresh water is obtained but rarely. The waterways being practically the only means of communication with outside places, the bulk of the people have their houses along or near the banks of *khāls*, which are closely shut in by jungle, while the state of the water in them increases their insalubrity. If the *khāl* is open, the tide flows in and out, and leaves, except at high tide, a bank of mud, which is as much as 10 or 12 feet high in places near the sea. If the mouth of the *khāl* has been dammed, the water is necessarily stagnant and unwholesome. Good fresh water, it is said, is often more difficult to procure than food; but the people apparently become inured to these conditions and drink water that is slightly brackish, apparently without any deleterious consequences.

The system of registering births and deaths now in vogue was introduced in 1892. Under this system vital occurrences are reported by the *chaukidars* through the presidents of *panchāyats* to the police, and the latter submit monthly returns to the Civil Surgeon, by whom statistics for the whole district are prepared. These returns, though unreliable as regards the causes of mortality, are at least sufficiently accurate for the purpose of calculating the approximate growth of the population,

VITAL  
STATIS-  
TICS.

the relative healthiness or unhealthiness of different parts of the district, and its salubrity or insalubrity as compared with other districts.

Applying this latter test, we find that, with the exception of the 24-Parganas, Khulná is the least unhealthy district in the Presidency Division, and that here as elsewhere the greatest mortality is returned under the head of "fever."

District.	Average annual death rate per mille from all causes		Average annual death-rate per mille from fever.	
	For ten years 1896-1905.	For five years 1901-1905	For ten years 1896-1905.	For five years 1901-1905.
Jessore ... ..	37.6	39.2	31.2	32.4
Nadiá ... ..	37.0	42.0	28.8	33.3
Murshidábád ... ..	35.7	37.7	28.0	29.7
Khulná .. ..	31.4	32.3	22.0	20.8
24 Parganas	27.4	28.9	18.8	18.3

As regards the growth of the population, during the nine years ending in 1900 the number of births reported largely exceeded the number of deaths except in Kalárá thána, where there was a considerable excess of deaths; and in the subsequent seven years (ending in 1907) there was an excess of 67,500 births. As regards the healthiness of different years, the greatest mortality recorded since 1892 (when the present system was introduced) was in 1900, when there was a death-rate of 38.80 per mille, and the least was in 1893 when it fell as low as 27.27 per mille. The highest birth-rate is 43.97 per mille recorded in 1902, and the lowest 25.50 per mille recorded in 1892.

PRIN-  
CIPAL  
DISEASES.  
Fever.

A special enquiry has recently been made regarding the prevalence of malarial fever in Khulná, and the results are summed up as follows in the Report of the Drainage Committee, Bengal, published in 1907. "The Khulná district exhibits four areas which may perhaps be differentiated, viz., that to the north-west, where the land is raised ordinarily above flood level, the population is dense, and the general conditions are similar to those in Jessore; the north-eastern portion from the Jessore boundary southwards to the latitude of Bāgherhāt, where the land is low and covered with swamps, but the country is more open and there is less jungle; the central portion representing the area of the Sundarbans, which has been cleared and populated in fairly recent times; and the uncleared Sundarbans to the south. The last named tract may be excluded from consideration.

"*A priori* it would seem probable that the central portion of the district would be more healthy than the northern strip, and the statistics show this to be the case, but the district as a whole is not abnormally feverish. The figures of total mortality in different thānas bear a fairly constant relation to the death-rates from fever, except perhaps in Māgurā, which is rather more feverish, and Asāsuni rather less so, than the total death-rate only would presume. Judging from the average annual fever rate in the whole district (1901-1905), viz., 20·8 per mille, the thānas showing a proportion per mille of 25 and over may be classed as specially unhealthy, and those of 15 and under as the reverse. Upon this basis we find in Khulnā the healthy thānas of Kāliganj and Pākgāchā closely followed by Asāsuni and Rāmpāl, all along the central line bordering upon the Sundarbans, while Kālāroā and Māgurā in the north-west corner, and Mollāhāt on the north-east, all show fever rates which, for the district, are high. The fluctuations in population exhibited by the census figures corroborate these results, except in the case of Mollāhāt (+5·6). The population in Māgurā between the two last censuses was practically stationary, while in Kālāroā (-10·1) it decreased noticeably. Sātkhirā (-1·7) also showed a small diminution, which its position in the fever list would scarcely anticipate, and the census report of 1901 mentions unsatisfactory health as a cause, although loss of trade by the diversion of the boat routes was also operative. The statistics of total births and deaths for five years (1901-1905) show an excess of births everywhere, although it was very small in Mollāhāt, and not large in Kālāroā, thus according generally, though not conspicuously, with the deductions made above.

"Local opinion is perhaps inclined to consider the district as more malarious than the statistics corroborate, and the District Magistrate remarks that there is a general belief that the district is malarious; but there is no evidence to suppose that malarial fever has considerably increased in any part in recent times, nor is there evidence to support the fact that there has been in recent times any decrease of population or failure to cultivate land on this account. The specially unhealthy areas particularly named by the local officers consist of villages scattered throughout the district, and the statement does not permit of verification without detailed enquiry. Local opinion was particularly emphatic regarding the unhealthiness of Sātkhirā, and the decrease of population between 1891 and 1901 is some corroborative evidence, but the figures scarcely support the statement made to us that malaria is "rampant" throughout the subdivision, and we are inclined to



think that the bad reputation of the subdivisional headquarters is partly due to the fact that it is more conspicuous than other villages.

"The only detailed local enquiry of recent times touching the Khulnā district is that of Captain Sinha, I.M.S., Deputy Sanitary Commissioner, made in March 1895 in the Kalārōā thāna, where an average spleen rate of 37·4 was found, about half the cases examined being adult and half children. So far as we can judge, there is no special reason for supposing the main proportion of fever in Khulnā to be other than malarial, and we submit the following conclusions regarding the district. (a) It is not conspicuously unhealthy in any part; (b) malaria is prevalent, but not especially so; (c) the most malarious thānas are Kalārōā, Mollahāt, Māgūā and perhaps Sātkhirā; and (d) the least malarious are Kālīganj, Pāikgāchā, Asāuni and Rāmpāl."

As regards the types of fever prevalent it is reported they are mostly malarial intermittent and remittent. The types of intermittent fever are generally quotidian, sometimes tertian, and occasionally quartan. In cases of remittent fever there is often constipation, and sometimes diarrhoea, nausea and bilious vomiting. Bronchitis is also often present, and in severe cases jaundice and delirium may occur. The fever persists for a week to two weeks, sometimes longer, and then it gradually passes off, unless there are other complications, either of the brain or, as often happens, of the lungs, or of the bowels—when the patient dies of coma or heart failure or of exhaustion from diarrhoea or dysentery. The sequelæ of malarial fevers are the same here as in other districts. There is enlargement of the spleen, which is often of an abnormal size, enlargement of the liver, jaundice, sometimes cirrhosis of the liver and hæmorrhage from the stomach and bowels, malarial cachexia and cancrum oris, dyspepsia, diarrhoea and dysentery—which last is very common. Anæmia and dropsy occur early in the course of the disease.

The dampness of the country, with low-lying badly-drained villages and abundant vegetation all round them, is the chief factor in the causation of the disease. The villages are built near river banks, and as the banks are gradually being silted up and raised, natural drainage is stopped, and the country thus spreads out into large marshy tracts. The houses, moreover, are surrounded by pit and hollows used as cess-pits; dirty tanks overgrown with weeds are numerous; and the villages, being imbedded in jungle, are shut out from ventilation and sunlight. Stagnant water, with decomposing vegetation, abounds; and

there is, therefore, a large area available for the breeding places of the anopheles mosquito, and consequently for the spread of the disease.

Next to fever the greatest mortality is caused by cholera, Cholera which is endemic in the district and sometimes breaks out in a severe epidemic form. This disease has almost invariably a characteristic rise and fall. The season of its prevalence begins in October, and continues until the rains have well set in. It is at its maximum in December, and at its minimum when the country is more or less under water, and the ground saturated with moisture.

Diarrhoea and dysentery generally prevail when the river water, which is largely drunk, becomes brackish. Small-pox has almost disappeared, very few deaths being caused by it from year to year. Infirmities, such as insanity, deaf mutism, leprosy and blindness, are comparatively rare. According to the census of 1901 only 44 males and 38 females per 100,000 are insane, and 62 males and 43 females per 100,000 are deaf-mutes. Other diseases and infirmities.

As regards the difference between the sexes, the usual causes of insanity, viz, progress of civilization, its consequent wear and tear of nerve tissues, consanguineous marriages, and general ill health, affect men and women, in a rural district like Khulnā, to an almost equal degree. The only cause which affects men in a greater degree than women, viz, the use of drugs and spirits, does not operate to any large extent in this district, where the men are extremely temperate and abstemious. They certainly smoke *ganja*, though not in excessive quantities; and this fact may cause the small difference between the numbers of male and female insanes. In the case of deaf-mutes the difference may be due to the concealment of the occurrence of the infirmity among females at the time of the census. It is true that it is very difficult to conceal the fact that a girl is a deaf-mute from an enumerator, when she is less than 9 years of age, but as soon as she grows older and is married, or otherwise secluded, concealment becomes easy.

Only 58 per 100,000 males and 37 per 100,000 females are blind, and there can be no doubt that the district is singularly free from the conditions which are injurious to eye-sight. Glare and heat, huts filled with foetid and pungent smoke, and the attacks of small-pox, which are the inducing causes of so much blindness elsewhere, are almost entirely absent; and the vivid green of the landscape and the cool breezes which blow almost throughout the year are extremely soothing to, and good for, the sight.

Lepers are rarer than in most Bengal districts, only 12 per 100,000 males and 5 per 100,000 females being returned as lepers in 1901. Leprosy is not endemic in this district, and the majority of its victims are to be found among the Bunās, who have come to the district from West Burdwan and Bānkurā, where the disease is unusually prevalent. The popular theory current in this district about leprosy is that it is caused by eating beef, and also by over indulgence in articles of food which have a heating effect. There is, however, no evidence, even of a plausible character, to support the theory. Beef is scarcely ever eaten in this district even by Muhammadans, and "articles of food which have a heating effect" is too vague and general a description for any conclusion to be based on the supposed effects of their consumption. It may be added that the people live principally on rice and fish, but most of the fish that they consume is fresh and wholesome, and not rotten or imperfectly cured. On the whole, however whatever, may be the cause, there can be little doubt that the people of this district enjoy comparative immunity from this dreadful disease.

#### VACCINATION.

Vaccination is compulsory within the limits of the municipalities of Khulnā, Sātkhirā and Debhātā, where paid vaccinators are employed. In the rural areas, where vaccination is voluntary, the operations are performed by licensed vaccinators employed from September to March, who charge 2 annas for each successful case. There is no particular prejudice against vaccination, but it appears to be less popular than in other districts of the Division, the ratio of persons successfully vaccinated being 29·82 per mille in 1906-07 and 30·13 per mille in the previous 5 years, as compared with 35·16 and 32·56 per mille respectively for the whole Division.

#### MEDICAL INSTITUTIONS.

There are three public charitable dispensaries with accommodation for indoor patients, viz., at Khulnā, Bāgherhāt and Sātkhirā, and 15 dispensaries which afford relief to out-patients only, viz., at Daulatpur (opened in 1866), Kalāroā (1896), Talā (1896) known as the Diamond Jubilee dispensary, Kāliganj (1897) known as the Vincent dispensary after the then Collector, Mollāhāt (1898), Chāndkhālī (1899), Nawāpārā (1900), Dumriā (1904) known as the Satish Chandra Mukherji dispensary after a former Collector, Rāmpāl (1906), Dakupi (1906) known as the Iawar Chandra dispensary, Sibbāti (1906), Paikgachā (1907), Debhātā (1907), Senhāti (1907), and Char Bāniāri (1907). A few years ago the District Board also started a "Floating Dispensary" to give immediate medical aid in cases of epidemic disease in the

distant interior of this river district, but apparently it failed to effect much good and was eventually closed.

\* The dispensary at the headquarters station of Khulna was founded in 1864 and is called the Woodburn Hospital after the late Lieutenant-Governor of Bengal, Sir John Woodburn, K.C.S.I., whose visit in 1898 gave an impetus to the institution.\* It has 17 beds for men and 7 beds for women, besides one bed in Mrs. Collin's Zanāna Cottage Ward recently opened, and it is maintained by a grant from the local municipality and by other funds. The dispensary at Sātkhira has 3 beds for men and 7 beds for women and is supported by the municipality there. The District Board maintains the Bāgherhāt dispensary, which has 10 beds for men and 2 beds for women. The Daulatpur dispensary is mainly supported by the Saiyadpur Trust estate and is in charge of a Civil Hospital Assistant, who is paid by Government. The rest are maintained by the District Board and are in charge of local native doctors having the qualifications of Hospital Assistants.

Besides the above, which are public dispensaries, there are three private dispensaries at Morrellganj, Banagrām and Nakipur, which are maintained by the zamīndārs of those places. The dispensary at Morrellganj is maintained by Mahārāj Kumār Rishi Kesh Law, that at Banagrām, which is called the Bindu Bāshini dispensary, by Srimati Kamal Kumārī Chaudhurāni, and that at Nakipur by Rai Hari Charan Chaudhuri Bahādur

## CHAPTER V.

## FORESTS.

GENERAL  
DESCRIP-  
TION.

THE forests reserved by Government in Khulna extend over 2,081 square miles, but of this area water channels account for more than 500 square miles. They are situated in the tract known as the Sundarbans between the southern limit of cultivation and the Bay of Bengal, and occupy numerous islands of varying sizes formed by the network of channels connecting the larger rivers and estuaries. The latter are subject to tidal influence, and the islands are inundated by salt water during high spring tides, except in the east, where the water of the Baleswar and other rivers is fresh during the rainy season owing to the large volume poured into them from the Ganges.

The forests are bounded on the north by the cultivated lands of the district, on the east by the Bhola and Baleswar rivers, on the south by the Bay of Bengal, and on the west by the Raimangal estuary and Jamuna river. The whole of the northern portion of this area is covered with forests composed of *sundri* (*Heritiera minor*), which deteriorate gradually towards the west and south, as the water of the rivers becomes more and more saline. There the predominating species is *garān* (*Cerops candolleana*), and *sundri* is less frequent and of inferior quality. The other principal species of most general distribution are:—among *Meliaceae*, *passur* and *dhundal* or *gamur* (*Carapa moluccensis*), and *amār* (*Amoora cucullata*); among *Leyuminosae*, *kiranj* (*Pongamia glabra*) and *shingar* (*Cynometra ramiflora*); among *Rhizophorae*, *kinkra* (*Bruguiera gymnorhiza*); among *Lythraceae*, *keora* (*Sonneratia apetala*) and *ora* (*S. acida*); among *Verbenaceae*, *bān* (*Avicennia officinalis*); and among *Euphorbiaceae*, *gewā* (*Excoecaria Agal-lacha*). By far the most valuable species is *sundri*, which is gregarious and occurs either pure or with an insignificant admixture of inferior trees, wherever conditions are suitable for its development. Its southern limit as a tree of any size may be said to be the

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This chapter has been prepared mainly from a note contributed by Sir H. A. Farrington, Deputy Conservator of Forests, formerly in charge of the Sundarbans Division.

sea at Tiger Point, and thence a line running in a north-westerly direction to the junction of the Kalindi and Raimangal rivers.

The most important minor products besides honey and wax are:—among *Palmae*, *hantāl* (*Phoenix paludosa*), *golpāid* (*Nipa fruticans*), which is a useful thatching material, *sanchibet* (*C. Kotang*), and *gotabet* (*C. Longipes*); and among *Gramineae*, *nal* (*A. Kurka*), which is used for matting..

The first attempt to realize any revenue from the forests HISTORICAL. appears to have been made in 1866, when Government leased out the right to levy dues on forest produce to the Port Canning Company at a yearly rental of Rs 8,000. The lease was, however, resumed by Government in 1869, as it was found that the monopoly thus established resulted in considerable oppression and was contrary to the interests of the general public. Further efforts were made to bring the forest under management in 1872, when they were examined by Mr Home, Deputy Conservator of Forests; and Dr Schlich, then Conservator of Forests in Bengal, came to the conclusion that they were inexhaustible and that nothing more than purely fiscal measures was required.

In 1874 the Lieutenant-Governor, Sir Richard Temple, decided upon a more vigorous policy. Revised rules for the sale of waste lands had been issued in February of that year, but a question soon arose regarding leases of lands in the Sundarbans, as the sale rules were found to be inoperative, the terms of sale being such as to prevent purchasers from coming forward. Sir Richard Temple, having personally visited the Sundarbans and examined the physical character and natural products of this tract, considered its relation to the surrounding districts and to the country at large. He found himself unable to accept the view that it necessarily was, or should be, a public object to get the whole of the Sundarbans gradually reclaimed and brought under cultivation. In his opinion, the public interest might be supposed to lie in the very opposite direction as regards a very large part of this tract. "The Sundarbans", he wrote, "include not only a mass of *sundri* trees of comparatively higher growth, but also masses of trees and shrubs of lower growth. The former are used for carpentry and timber work; the latter for fuel. The area of both is very considerable. The relation of the tract to the surrounding districts also is not to be lost sight of. The *sundri* forests supply wood for boat-building to the 24 Pargannas, to Jessore, to Backergunge, to Noakhali, and to other districts, and also furnish wood for many purposes of domestic architecture."

At this time an experiment was being tried for employing *sundri* timber in the manufacture of railway sleepers, while other

trees supplied firewood, and fuel to Calcutta and to many other towns, the needs of which could hardly be supplied otherwise than by the Sundarbans. Thus, the country at large had the strongest interest in the Sundarbans being preserved as a source of timber, wood, and fuel for the use of southern Bengal, so that wholesale reclamation was not wanted there. It was felt that in some parts of this tract the substitution of rice-fields or jungle might be desirable; but in most parts the ground already bore produce which was more valuable to Bengal than rice. Sir Richard Temple accordingly wished to restrict reclamation until it could be established by adequate enquiry whether the Sundarbans could meet these wants and still afford room for reclamation. It was admitted that in every tract some portions must be cleared, in order to render the remainder accessible to man and available for his use; and in his opinion, whatever reclamation might be permitted or encouraged in the Sundarbans should be arranged solely with this view.

Already much of the Sundarbans had been reclaimed, and Sir Richard Temple thought that the time had come when the position should be reconsidered. Complaints were made to him in the Backergunge district that *sundri* logs of the best quality were more rarely seen in the market than formerly. There was not sufficient security against the best kind of *sundri* trees being cut down in the same reckless and wasteful manner as that which was known to have prevailed in many parts of India before the institution of the forest system. Holding these views, therefore, he considered that the public interests required that no new negotiations of any kind should be opened for disposing of unclaimed land in the Sundarbans till it was decided by what rules Government could best maintain the principle that reclamation must be subordinate to forest conservation. For this purpose a local investigation by a properly qualified officer was necessary, and the Conservator of Forests (Dr. Schlich) was accordingly deputed to proceed to the spot and make enquiries.\* As the result of his investigations, Dr. Schlich came to the conclusion that the forests were being overworked and that steps should be taken to prevent the exhaustion of the *sundri*-producing tracts.

The Sundarbans Forest Division was accordingly constituted in 1874-75, 885 square miles being notified as reserved in that year, while 314 square miles were added in 1875-76, thus making a total area of 1,199 square miles. It was laid down that in the

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\* C. E. Buckland, *Bengal under the Lieutenant-Governors* (1901), Vol. II, pp. 613-14.

Bāgherhāt forests, which lie to the east of the Passur river, no *sundri* tree of less than 3 feet 9 inches in girth at a height of 4½ feet from the ground might be cut, but no other restriction was imposed on the removal of any kind of produce. The collection of dues on all forest produce exported was initiated, and the establishment of revenue stations commenced, the rates in force being very liberal, one anna per maund being charged for *sundri*, *pussur* and *amūr* timber, and half an anna per maund for *gārān* timber and *sundri* fuel. The system of management continued on these lines till the forests were visited by Mr. Dansy, Conservator of Forests, in 1891, when it became clear that the *sundri* forests were being rapidly destroyed by excessive felling, and that the restriction placed on the cutting of *sundri* in the Bāgherhāt forests had been ignored.

It was then decided to restrict the felling of *sundri* to yearly coupes, of which each should contain one-tenth of the area of the real *sundri*-bearing tracts, viz., the forests of the Bāgherhāt and Khulnā subdivisions; and in view of the extensive destruction of *sundri* timber which had gone on, the minimum felling girth had to be reduced to 3 feet. A working plan on the above lines was drawn up in 1893 for 10 years; but owing to the inadequacy of the staff, the working of the plan became a dead letter, and before the cycle of 10 years had elapsed, felling of undersized trees were being carried out all over the area. Besides this, damage, to an extent that defies description, was resulting from the felling of *sundri* fuel and poles in the forests named above under permits issued for the forests lying further west.

On the expiry of this plan in 1903, a new system of management was initiated, by which the annual tellings were confined to one-fortieth of the Bāgherhāt and Khulnā forest area and were properly supervised, while no permits for *sundri* were issued for the remainder of the forests. The result was an enormously decreased supply and a sharp fall in revenue accompanied by a rise in the market value of *sundri*. Working is still proceeding on similar lines, and the introduction of the system of monopoly sales described below has resulted in a healthy competition, which it is hoped will restore the revenue to something like its former proportions. The rates at present in force are—9 pies per maund for *sundri* fuel, *amūr* and *gārān* poles, 6 pies per maund for poles of other species and *gārān* fuel, 3 pies per maund for fuel of other species and minor produce, Rs. 4 per maund for wax and Re. 1-8 for honey.

For administrative purposes the Division is grouped in three **MANAAN** circles known as the Bāgherhāt, Khulnā and Sātkhīrā circles. **MANAAN**



Revenue stations have been established at all the principal points of egress from the Sundarbans, and purchasers proceed to the forests and take their requirements from any locality they choose, on payment of the prescribed royalties per maund of boat measurement. The latter are extremely low, as compared with the actual value of the produce, and rightly so when the difficulties attendant on work in a tidal forest are considered. Purchasers are, however, bound by law to return with their permits to a revenue station where their boat loads are examined and checked. The only exception to the above rule is found in the procedure adopted for disposing of the annual allotment of *sundri* timber and fuel, which is regulated by a systematic working plan. The export of *sundri* is only permitted from a certain definite area every year, and under certain conditions of supervision and control. *Sundri* fuel is supplied from thinnings in the younger pole forest, while the exploitation of the available *sundri* timber in the coupe of the year is now provided for by improvement fellings, in which the large quantity of defective and damaged trees (to remove which no provision had been made in former years) is being utilized. All trees are selected and marked for felling under trained supervision and sold at competitive rates under what is known as the monopoly system.

The aim of this system is to fix automatically the actual value of any produce sold, and its working is as follows. For a division or area unit, royalty rates are fixed for the produce to be sold, based on what is likely to be received for similar produce if extracted from more inaccessible areas. Then, the produce or area to be sold is divided into lots, and the monopoly or sole privilege of working each lot is sold by auction, the monopoly price bid being over and above the royalty rates to be paid afterwards. In other words, the contractor pays the price he bids for the monopoly, plus the royalty rates on the actual quantity of timber, etc., removed. A consequence of this method is that the contractors by bidding one against the other naturally fix the proper market value of the product, and the owner, i.e., the State, receives a higher value for the trees nearer the market than for those further away. Further, detailed arrangements are made for the control of forest produce in transit, in order that the royalty rates may be levied on all that is removed; and before trees can be sold, they have to be marked, thereby enforcing an important sylvicultural principle and check.

It is scarcely necessary to enlarge on the future benefit that will accrue to the forests under this system. One immediate result has been to curtail the supply considerably, and another has

been to throw the bulk of the trade in the valuable *sundri* timber into the hands of Backergunge *mahdjans*, who invariably outbid other competitors at the auctions.

It may be noted that, in addition to the revenue stations mentioned above, there are also some 10 patrol boats in charge of foresters, which patrol near the boundary between the various stations, in order to check illicit removals, which the local villagers cannot abstain from attempting from time to time. Such patrol work is supplemented by the tours undertaken by the Gazetted Officers of the Division, who inspect the work of both the station and patrol officers, and also do a considerable amount of patrolling in the more inaccessible parts of the forests.

The following table gives the salient statistics of the working of the forests during the 10 years 1895-96 to 1904-05 and also during 1906-07.

	Timber	Fuel.	Minor produce.	Revenue.	Expenditure	Surplus.
	Cubic feet.	Cubic feet	Rs.	Rs.	Rs.	Rs.
Total	87,598 617	99,902 608	654,074	45,04 102	8,12,900	36 91,202
Average	8,759,861	9,990,260	65,807	4,50,410	81,290	3,69,120
1906-07	4,214,159	9,153,284	93,917	5,21,151	2,02,600	3,18,551

The Sundarbans forests supply year after year immense quantities of forest produce to Khulnā and the adjoining districts, especially the 24-Parganas, Jessore and Backergunge. Endless numbers of boats proceed throughout the year to the forests and return laden with timber, firewood, thatching materials, etc., to supply which there is scarcely any other source available. There are, it is true, 1,758 square miles of protected forests in the western part of the Sundarbans situated in the 24-Parganas district, but owing to its saline character this tract does not produce a large quantity of the best timber and fuel trees. There is also a private estate in the Sātkhira subdivision, which partly supplies the wants of the neighbouring inhabitants, and alongside the forests lie the lands disforested from time to time and leased for cultivation, which in some cases still contain forest. With these exceptions, the forests have to meet the demand for forest produce throughout the Khulnā and Jessore districts, and in a lesser degree that of the Backergunge district. Calcutta is also a market for *gajpāts*, fuel and *garan* posts, and in addition to these products, *sundri* timber goes to Dumriā in the Khulnā district, to many places in the Backergunge district, to Telihāti in the Faridpur

MARKETS.

district, and to Jessore. As bamboos do not grow well near the Sundarbans area, and nearly all available land is devoted to the cultivation of rice, there is a steady local demand for materials required for house-building and agricultural implements, while the dried fish industry also absorbs a quantity of firewood. *Sundri* timber for boat-building is in great demand throughout the neighbouring districts; but latterly, owing to the curtailment of the supply, it is giving place to teak and, in a lesser degree, to *sal* timber. It is believed that comparatively few boats are now built of *sundri* in the Khulnā district, the bulk of the material available being bought up by wealthy *mekhans* of Backergunge, who in addition to purchasing for their own requirements, export this timber to Dacca and other districts to the north.

## CHAPTER VI.

### AGRICULTURE

GENERALLY speaking, agriculture is carried on successfully in the settled tract to the north, but conditions are unfavourable to it in the south-western portion of this tract, viz., in parts of thāna Paikgāchā in the Khulnā subdivision, and in thānas Asāsuni, Kāhganj and the southern portion of thāna Sātkhirā in the Sātkhira subdivision. Elsewhere, the land is fertile and is renovated periodically by inundations of sweet water, which wash away salt and leave fresh silt deposits. GENERAL  
CONDI-  
TIONS.

In the northern portion of the Sātkhirā subdivision, where the country is comparatively high, the crops are not exposed to salt water inundations: but in other parts of the cultivated area they are liable to fail, as the salt water coming up from the sea through the channels in the Sundarbans is not always washed away by timely rainfall. In fact, in a year of abnormally short rainfall, the river water remains more or less salt, even during the monsoon season, with most prejudicial results to the winter rice, the staple crop of the district. Two things are essential for the successful cultivation of this crop—dams and embankments of adequate strength, and sufficient rainfall to sweeten the rivers at the end of June so that their water may be used for irrigation. Unfortunately, in some tracts, where embankments are most necessary, many of the zamindārs are absentees and some are indifferent to the welfare of the tenants; the subordinate tenureholders are small men and impoverished; and the cultivators themselves are improvident. Embankments have consequently been permitted to fall into disrepair, thus allowing salt water to percolate into the fields to the gradual deterioration of the soil.

For practical purposes, the lands of the district may be divided into four main classes —(1) the high lands to the north lying along the banks of the rivers. (2) the northern low lands situated in the interior away from the banks of these rivers, (3) the lands adjoining the Sundarbans, which have been reclaimed within comparatively recent times, and (4) the unreclaimed Sundarbans. Tracts of  
fertility.

## KHULNA.

The riparian tract first mentioned contains old settled villages, gardens and pasture land. The main products are areca-nut, coconut, betel leaves, bamboos, mangoes, plantains, tamarind, turmeric, date juice and thatching straw; of these products the most valuable are areca-nut and coconut, from which the villagers derive a great part of their income. Vegetables are also grown in this tract, which is practically the only one in which market gardening is feasible.

The northern low lands situated in depressions between the rivers contain extensive areas of *bil* lands, large flat tracts on which hardly a single tree can be seen. These lands are mainly cultivated with rice and are also suitable for jute and oil-seeds. Those *bils* which are connected with the rivers by means of efficient channels contain the best land for many varieties of coarse paddy and jute, for the creeks bring down rich river silt and also drain away the water, but in many cases the surrounding rivers have had their banks raised by the deposit of silt, the *khals* have ceased to be proper drainage channels, and the *bils* have become useless swamps. Where there is no proper drainage, the cultivators are obliged to wait till the fields dry up, and, in a year when the rains are early and copious, such lands remain under water for a very long time and are unfit for dry cultivation. Another difficulty in the way of successful cultivation of *aman* rice in these tracts is that many of the rivers have become brackish, and in a year of heavy rainfall they overflow their banks, break through the dams across the *khals* or the embankments round the fields, and submerge and destroy the seedlings.

The third tract is intersected by innumerable rivers and *khals*, the water of which is salt for a great part of the year. Many of the *khals* are therefore dammed up during the summer months, and all communication with the larger rivers is cut off, in order to prevent the salt water getting to the fields, which have also to be protected by small embankments called *bheris*. The dams are opened out during the cold weather, when the crops are gathered in and the rise of the water is less. In this tract cultivation is spreading to the south, and land is being gradually reclaimed from the Sundarbans and also protected by *bheris*. The result is that at the time of flood tide, salt water from the sea, which used to inundate lands covered with jungle, now comes higher up, and mixes with the water of the rivers and *khals*, which but for such admixture might remain fresh for a great part of the year. *Aman* rice is the chief staple product of this area, *aus* and *boro* rice and jute being grown only on

high lands, while other crops are cultivated in such small quantities as not to require any particular notice

Further to the south lie the Sundarbans, in which reclamation is now in progress. The following account of the method of reclamation, and the difficulties attending it, is quoted with some condensation from Sir James Westland's Report:—"The clearing of Sundarban forest is a most arduous undertaking. The trees intertwine with each other to such an extent, that each supports and upholds the others. Some of the trees, too, are of immense size, one sort, the *ju* tree, spreading and sending down new stems, till it covers perhaps an acre of ground. Trees like these cannot be cut down and removed in bulk; they must be taken piecemeal, and the tree must be cut up into little pieces. But the trees are not the only difficulty, for there is a low and almost impenetrable brushwood, which covers the whole surface. This has simply to be hacked away bit by bit by any one who attempts to penetrate into the forest. And there is no small danger from wild beasts while all this is going on. Tigers are not unfrequent, and occasionally break out upon the defenceless forest-clearers, if the latter approach their lair too closely. Sometimes a tiger takes possession of a tract of land, and commits such fearful havoc, that he is left at peace in his domain. The depredations of some unusually fierce tiger, or of more than one such tiger, have often caused the retirement of some advanced colony of clearers, who have, through their fear been compelled to abandon land, which only the labour of years has reclaimed from jungle.

"Supposing, however, that the Sundarban cultivator has got over these obstacles, and the equally formidable, although less prominent, difficulties entailed by a residence far from the haunts of men, his dangers are not yet past. Unless the greatest care is taken of the land so cleared, it will spring back into jungle and become as bad as ever. So great is the evil fertility of the soil, that reclaimed land neglected for a single year will present to the next year's cultivator a forest of reeds (*nal*). He may cut it and burn it down, but it will spring up again almost as thick as ever; and it takes about three eradications to expel this reed when once it has grown. The soil, too, must be cultivated for ten or twelve years before it loses this tendency to cover itself with reed-jungle. When a sufficient number of people are gathered on a new clearing, they tend, of course, to form a settlement, and to remain permanently where they are. But the furthest advanced parts of the cultivation, and some also of those which are not new or remote from old lands, are carried on upon

SUNDAR-  
BAN RE-  
CLAMA-  
TION.

a different principle. A large number of husbandmen, who live and cultivate lands in the regularly settled districts to the north, have also lands in the Sundarbans, which they hold under different landlords.

Seasons of  
cultiva-  
tion.

"The cultivating seasons in the Sundarbans are later than those further north, and the plan which is followed by these double cultivators is as follows:—The months of Chaitra, Baisakh and Jaistha, corresponding roughly to the English months of April, May and June, are spent in cultivation at home. The husbandman then, having prepared his home cultivation, embarks with his ploughs, oxen, and food, and proceeds to his *abad* or Sundarban clearing. July, August and September are spent in ploughing and sowing and preparing the crops there, the peasant building a little shed as a dwelling for himself. The water gets high in August and September, but this is little impediment to cultivation. A considerable portion of the land under rice is situated below high water mark; but the planting is easy, for rice sown on higher lands is transplanted into these low lands when it is strong enough to bear the waters. After having sown and transplanted his Sundarban crop, the husbandman returns home, and these outposts of civilization are absolutely abandoned, —large extents of cultivated rice fields without a trace of human habitation. By the middle of December, the home-cultivated rice has been cut and stored, and the peasant then returns to the Sundarbans, and reaps the crop on his clearing there. At this time of the year\* (January and February), reapers or *dawals* crowd to the Sundarbans, and are extensively employed for the harvesting. When the rice is cut and prepared for sale, the *beparis* or dealers come round and buy it up, and the zamindar also sends his agents round to collect the rents from the cultivators. The peasant having sold his grain, pays his rent, and brings the balance of his money back with him to his home.

"While a great deal of cultivation in the more remote parts of the Sundarbans follows this method, in the nearer tracts there are large settlements of husbandmen who dwell permanently near the land they have under cultivation. But it must be remembered that these tracts are after all sparsely inhabited and that many of the cultivators who dwell in them, besides having a holding near their own houses, have also another, eight or ten miles away, which they visit only occasionally when they have work to do. The great fertility of the land renders it easy for a husbandman, to keep large areas under cultivation; and thus, what with resident large cultivating husbandmen and non-resident husbandmen, the population in the Sundarban tracts is not at

all equal to what the amount of land under cultivation would lead one to expect.

"Another feature in the reclamation and cultivation of these Sundarban lands is the embankment of water inlets. It is a characteristic of deltaic formations that the banks of the rivers are higher than the lands further removed from them; and the whole of the Sundarbans may be looked on as an aggregation of basins, where the higher level of the sides prevents the water coming in to overflow the interior. Many of these basins are so formed, that, left to themselves, they would remain under flood, as they communicate with the surrounding channels by means of *kholes*, or small water-courses, which penetrate the bank; and a great part of reclamation work consists in keeping out the water, and thus bringing under cultivation the marsh land inside. This method of reclamation of low lands applies both to the Sundarbans proper and also to a remarkable line of depression which runs across the district immediately north of Khulnā. Part of these low lands has been, and part remains to be, drained and reclaimed by the method referred to.

"In employing this method, all the inlets from the channels surrounding are embanked, and smaller channels called *poynās* are opened round their ends. The inlets themselves are too big to be kept under control, but these *poynās* can easily be so kept. This embanking is usually done in November, after the rivers have gone down. When the tide is low, the channels are opened, and the water from the inside drains off; when it is high, the channels are closed. Much land can be rendered culturable by this means, which would otherwise be marsh. But here also a single year's neglect may take away at one stroke all that has been gained by many years' labour. The effect of the rains and the freshets of each year is to partially destroy all the embankments that were used the previous year, and to flood the lands. The rice that has been sown has, however, attained sufficient hardihood to remain uninjured; and when the waters again go down, the harvest may be reaped. But unless the embankments are again renewed in November, the floods will not have ceased to cover the low lands by sowing time, the land will remain unsown, and jungle and marshy reed will take the place of the paddy."

A sufficient and well distributed rainfall is essential for the growth of the rice crop, the staple product of Khulnā. The soil in many parts is more or less impregnated with salt; and before seedlings can be grown and transplantation effected, the salt must be washed out. Consequently any deficiency of rainfall at these

Embank-  
ments.

RAIN-  
FALL.



critical periods reduces the area under cultivation. At the same time, ample rain is required to keep the water of the rivers and *khals* sweet, especially as the silting up of the rivers at their heads has caused them to remain salt for a much longer period than formerly.

As regards the quantity of rain required at different periods, heavy downpours in the month of Baisakh (April-May) seriously interfere with the growth of the seedlings of *boro dhau* or broadcast paddy. Moderate showers, however, are beneficial, and at the same time they facilitate the sowing of winter rice in nurseries. The month of Jaistha (May-June) should be dry, in order that the seedlings of the broadcast paddy may develop properly, but a slight fall is not looked upon as harmful. The fall must be copious in the months of Asarh (June-July) to allow transplanted paddy to be sown in the nurseries and to wash away the salt deposits in places subject to salt water inundations. Heavy rain is also required in the month of Srāban (July-August) for the development of the paddy seedlings in the nurseries, but it should come at intervals to enable weeding and transplantation to be carried on successfully. Absence of good rain in the months of Bhādra (August-September) and Āswīn (September-October) is most injurious, as the paddy plants, deprived of moisture, wither just when they are coming to maturity. Moderate showers only are required in the month of Karttik (October-November), when they do good both to the winter rice and the *rahi* crops; an excessive fall, however, is injurious to both. Rain in the month of Agrahāyan (November-December) seriously interferes with the reaping of the paddy, and at the same time causes great damage to the pulse crops which are then flowering. Showers in the month of Māgh (December-January) are hailed by the cultivators with joy, for they enable the land to be ploughed easily and exposed to air and sunshine. The months of Phālgun (January-February) and Chaitra (February-March) should be rainless, so as to allow the fields to be benefitted by the heat of the sun, and to permit of paddy cultivation in the *jobe* lands, which otherwise lie fallow in these months.

#### SOILS.

The soils of the district may be broadly divided into 4 classes, viz., (1) *dudshiya*, (2) *māliāl*, (3) recent alluvion, and (4) *jole*. *Dudshiya* is a sandy loam found chiefly on the banks of rivers and *khals* and in the higher ground in the Sātkhira subdivision; it is especially suitable for fruit trees, *pan* plantations, and the cultivation of pulses and oil-seeds. *Māliāl* is a clayey soil mainly used for rice crops. The recent alluvial soil, formed by the silt

brought down by the rivers, is composed of sand or of sandy loam. It is either a *char* thrown in the midst of a navigable river or an accretion to the main-land. *Jobe* is soil formed of decomposed vegetable matter deposited in the marshes. When mixed with the silt brought down by any stream which may happen to flow into these marshes, it forms a sort of stiff black clay. Winter rice of the coarsest sort is the only crop grown on such lands.

The following table shews the normal acreage of the crops of **PRINCIPAL CROPS.** *Khulnā* and their percentage on the normal net cropped area:—

Name of crop.	Normal acreage.	Percent age on normal net cropped area.	Name of crop.	Normal acreage.	Percentage on normal net cropped area
Winter rice ...	656,300	83	Summer rice	53,800	11
Sugarcane ..	1,500		Gram	100	...
Total <i>Aghani</i> crops	657,800	84	Other <i>rahi</i> cereals and pulses	10,000	1
Autumn rice ..	43,000	5	Other <i>rahi</i> food-crops	2,000	...
<i>Bhādai</i> cereals and pulses ..	1,000		Linseed	2,500	...
Other <i>bhādai</i> food-crops ..	4,700	1	Rape and mustard	48,000	6
Jute ..	37,300	5	<i>Til (rahi)</i>	6,200	1
<i>Til (bhādai)</i>	1,100	...	Other oil seeds ..	5,000	1
Total <i>Bhādai</i> crops	87,100	11	Tobacco	5,200	1
Forest ...	133,712	16.9	Other <i>rahi</i> non food crops	11,700	1
Twice cropped area ...	198,200	25	Total crops	175,100	22
			Orchards and garden produce	59,400	8

As elsewhere in Lower Bengal, rice forms the staple crop, **Rice.** and consists of three main classes, *aman*, *aus* and *boro*, of which *aman* is by far the most important.

In the drier portion of the district to the north and north-west **aman.** *aman* rice is cultivated on low land, where water lies from one foot to three feet deep in the rains. The preparation of the land begins in the middle of February or the beginning of March, the land being ploughed several times before sowing. In April or May, after the first fall of rain, seed is scattered broadcast in a nursery. When the seedlings make their appearance, another field is prepared for transplanting. By this time the rainy season has thoroughly set in, and the field is dammed up so as to retain water. It is then repeatedly ploughed until the water becomes

worked into the soil, and the whole is reduced to thick mud. The young rice is then taken from the nursery and transplanted in rows about nine inches apart. After this, the crop is left to mature, and is generally ready for harvesting in November or December. *Aman* rice is also occasionally sown broadcast in marshy lands.

In the Sundarbans, land suitable for nurseries are not, as a rule, available, and consequently *aman* rice is generally sown broadcast on the marshes. Sowing takes place in the early part of July, and the crop is ready for reaping in January, the soil easily retaining up till that time all the moisture necessary for the growth of the grain. The method of reaping, too, is different from that which prevails in the rest of the district; for as the straw is of absolutely no value in the Sundarbans, the crop is reaped by only cutting off the heads, and the straw is subsequently burnt down. The finest outturn of winter rice is obtained from the reclaimed portions of the Sundarbans, which are famous for the teeming harvests obtained from the rich virgin soil.

The principal varieties of *aman* rice grown in the district are (1) *bharua*, (2) *lakshmi-kajal*, (3) *daqua bhog*, (4) *karttik-sal*, (5) *dalkachu*, (6) *jangā sal*, (7) *kalamkati*, (8) *komoa-jil*, (9) *lanakchūr*, (10) *bāsmati*, (11) *kalāngi*, (12) *lohmiga*, (13) *kamur-sau*, (14) *khunkon*, (15) *hātī-kāu*. There is a list of about seventy other local names—and even this is not exhaustive—but the above are the principal kinds. It is difficult, however, for any one but an expert to define the distinctions between these different kinds of rice.

*Aus.*

*Aus* rice is generally sown on high ground. The field is ploughed when the early rains set in, ten or twelve times over, till the soil is reduced nearly to dust, and the seed is sown broadcast in April or May. As soon as the young plants reach six inches in height, the land is harrowed in order to thin the crop and clear it of weeds. The crop is harvested in August or September, and a second crop of pulse or oil-seeds is generally taken off the land in the cold weather. The principal varieties of *aus* rice are as follow:—(1) *sāryaman*, (2) *kersai*, (3) *kāliā payāngi*, (4) *begun bichi*, (5) *sifahār*, (6) *khubni*, (7) *bānsphul*, (8) *gangā-jali*, (9) *parāngi*, (10) *b-ni-bōchal*, (11) *pānā-jhure*, (12) *ghā-sāl*, (13) *pipra-sāl*, (14) *karam-sāl*, (15) *bend-phuli*, and (16) *kālaudi*.

*Boro.*

*Boro* rice is sown on marshes which dry up in winter. The preparation of the land commences in the middle of November; sowing takes place ten days later; and reaping lasts from the middle of March till the middle of April. The land is

hardly ploughed at all. The seed is scattered broadcast in the marshes or *bils* as they dry up, and the young shoots are transplanted when about a month old. There is another kind of *boro* paddy called *aus boro*, which is sown broadcast during the months of April and May and reaped in August or September.

Another description of rice known as *uri dhan* is indigenous in the deep-water marshes and is occasionally used as food by the Pods and other fishing and boating castes, who live and ply their avocation among the swamps. The plant looks like a confused mass of creepers floating on the water, and shoots forth its ears of grain in every direction. A peculiarity of this rice is that the grain drops from the ear into the water when it attains maturity. To prevent this, the fishing castes take a great deal of trouble in binding the ears together before the paddy ripens. This rice grows plentifully in the marshes, and is at the disposal of any one who is disposed to gather it. Very little is collected, however, except by fishermen or boatmen, for the swamps are deep, and the crop hardly repays the labour of binding the ears and collecting the grain. Uri dhan

Except rice there is no cereal of any great importance. Gram (*chholā*) is cultivated on high land, but in 1906-07 had an area of only 100 acres, while other food grains, including pulses, were grown on 11,600 acres. They are mainly cold weather crops, such as peas, *masuri*, *kheari*, and *kalai*, sown in October and gathered in February or March, and are cultivated only on small patches of land. Other cereals and pulses.

The largest area under any one crop except rice is returned by rape and mustard, with a normal area of 48,000 acres, while other oil-seeds, linseed, *tul*, etc., account for an aggregate of 14,800 acres. Oil-seeds.

The crop of greatest importance after rice is jute. Twenty years ago it was reported that there was very little jute cultivation in the district, but the area devoted to the crop has steadily expanded of late years and in 1906-07 was returned as 87,000 acres. The process of cultivation is as follows. The field is well ploughed two or three times after the first fall of rain in March or April, and allowed to remain for two months. This interval the cultivator employs in manuring the land with cow-dung, rich black soil collected from the bottom of tanks, ashes, and all manner of vegetable refuse. The land is again ploughed several times in May, the clods well broken, and the seed sown broadcast. When the young plants are about six inches high, a harrow is drawn over the field to thin the plants where they are too thick, as well as to furrow the land in order to assist the

absorption of moisture. When the plant is a foot high, the field is carefully weeded by hand, after which it receives no further attention until the cutting season in August or September. When the crop is cut, the leaves are stripped off and scattered over the ground to rot in as manure. The jute stalks are then bound together, and steeped in a pool or tank for ten to fourteen days, until decomposition sets in, and the fibre becomes fit for separation from the stem. This is generally done by hired labour. The jute-washer snaps the stem about two feet from the root, and pulls out the inner woody part from the portion thus broken. He then lays hold of the fibre, and by continued gentle pulling, gradually separates it from the wood which still remains in the upper part of the stalk, and also from the outer bark. It is then thoroughly dried in the sun, and bound up into bundles called *gant*; and in this state it is sold to the dealers.

Tobacco  
and sugar-  
cane.

Among other crops may be mentioned tobacco, which is raised on 5,200 acres; two varieties are grown, known as *desht* and *matihari*. Sugarcane is grown mainly in the Morrellganj thana and in small quantities elsewhere; the land is generally too low-lying to admit of its successful cultivation.

Date-palm  
cultiva-  
tion.

The land being unsuitable for the cultivation of sugarcane, sugar is usually obtained from the *khaur* or date-palm, which is grown extensively in the Salkhira subdivision, and more or less everywhere in the district where the soil is favourable to its growth. For a regular date plantation high ground is selected. The seeds are sown in June or July after the land has been ploughed three or four times, and the trees make their appearance in about five or six months. They receive very little attention for the first two or three years, but the plantation has to be kept perfectly free from undergrowth when the trees attain a height of about 2 feet; for this purpose the turf is ploughed up from time to time. They come to perfection in seven or eight years, when they are tapped, but their development depends on the soil, saltish land being most favourable for their growth. The trees are planted in groves or are scattered about singly or in groups both in the villages and among the fields, especially along their boundaries, where they form a conspicuous feature in the scenery. An account of the tapping and other processes in the manufacture of date sugar will be given in Chapter IX.

Betel-nut  
and coco-  
nut trees.

The Khulna and Bāgherhāt subdivisions are particularly rich in coconut and betel-nut palms; and there is a large export of betel-nuts and coconut oil. The mode of gathering betel-nuts is peculiar. They grow, as is well known, on the top

of long slim trees. The collector mounts one of these trees, and after he has thrown down what he plucks from it, he swings the tree backwards and forwards, till, receiving sufficient impulse, he throws himself like a monkey on to the next tree. A number of accidents, and occasional deaths, occur from the falls which the collectors get in this operation, when they fail to catch hold of the trees towards which they are swung. The trees are planted in groves or are scattered in the midst of other cultivation, and may be found in almost every village. They are especially numerous in the east of the district.

Coconut trees are also scattered about the district, rather than grown in groves; the fruit is collected in the rainy season. A fully ripe coconut is called a *phund*, and from its kernel several kinds of sweetmeats are made, such as *nārikel nāru*, *raskara*, *chandrapuli*, etc. The nut is put to a variety of uses; ropes and mats are made from the husk, oil is extracted from the kernel and forms an important article of trade; the shell is made into the bowls of hookahs, cups, etc.; and the tree itself, when past bearing, is cut down, and the trunk hollowed into a canoe.

Besides the fruit bearing trees mentioned above, mango trees are grown extensively in the north of the district, but the fruit is not of good quality. Plantains are also largely grown in the same tract, the three principal varieties being *murtamān*, *chāmpā*, and *lānthāl*, the last named variety is considered to be the purest food, although inferior in flavour to the others. Among other fruits may be mentioned pine-apples and lemons, which are grown in small quantities near the banks of rivers in the north.

FRUITS  
AND  
GARDEN  
PRODUCE.

Conditions are, on the whole, unfavourable to market gardening, owing to the low-lying, water-logged soil and the attacks of insects, but vegetables are grown on a fairly large scale on the high land near river banks. The most common vegetables are *baṅgun* or brinjal (*Solanum melongena*), several varieties of sweet potatoes, pumpkins, cucumbers, onions, garlic and radishes. A variety of yam called *mānkachu* is cultivated extensively, and potatoes are grown to a small extent on patches of exceptionally high land in the north of the district. Among other garden produce may be mentioned turmeric, sown in June and gathered in January, and chillies, sown in June and gathered in January or February. *Pan* gardens, known as *baraj*, are also found in the high ground which forms about the banks of rivers and *khals*. Potato cultivation is gradually becoming popular in consequence of the success attained in Saiyadpur *Tunstall* estate.

The neighbouring local zamindars are beginning to introduce the crop on their own estates, and arrangements have been made to demonstrate the comparative values of the best varieties at a small farm at Khulnā.

EXTENSION OF CULTIVATION.

In the north of the district cultivation is being steadily extended, and the shallow *bils* and marshes, which form so marked a feature of this portion of the district, are being steadily converted into rice fields. In the south the Sundarbans contain an immense area of fertile land awaiting the axe and plough, but the jungle is being steadily pushed back. Every year more land is being brought under cultivation, and steady progress is being made in the settlement of cultivators on new clearings, which attract cultivators not only from other parts of the district, but also from Nadiā, Jessore, Faridpur and elsewhere.

IMPROVEMENT OF METHODS.

On the other hand, but little progress is noticeable in the improvement of methods of agriculture or in the introduction of new or better varieties of crop. This is attributed to the fact that many of the zamindars, who have the best opportunities of making such reforms, take little interest in the welfare of their tenants. The latter are thus left to work out all improvements by themselves, and for this they have neither the means nor the intelligence necessary. At the same time, they have been quick enough to see the possibilities of profit in jute cultivation, and the area under this crop has been very largely extended.

Of recent years, however, signs of a change for the better are noticeable, owing to the establishment of an annual exhibition at Khulnā. It includes a cattle show and an exhibition of agricultural produce, as well as of local arts and industries. Various kinds of paddy, cotton, potatoes, sugarcane and vegetables are exhibited, and improved agricultural implements are shown by the Agricultural Department. A District Agricultural Association has also been formed, which has shown much activity and has given a considerable impetus to the cultivation of potatoes, a cultivation which is practically new to the district; mangels have also been successfully grown.

CATTLE.

The district is not suited for the rearing of cattle, as the water of many of the rivers becomes highly charged with salt during certain seasons of the year, and the cattle have little else to drink but this salt water, while the vegetation produced by it is also injurious. Consequently, only such cattle are kept as are indispensably necessary for agriculture, and when these die off, they have to be replaced from other districts. No care is taken about breeding, pasturage is deficient, and the